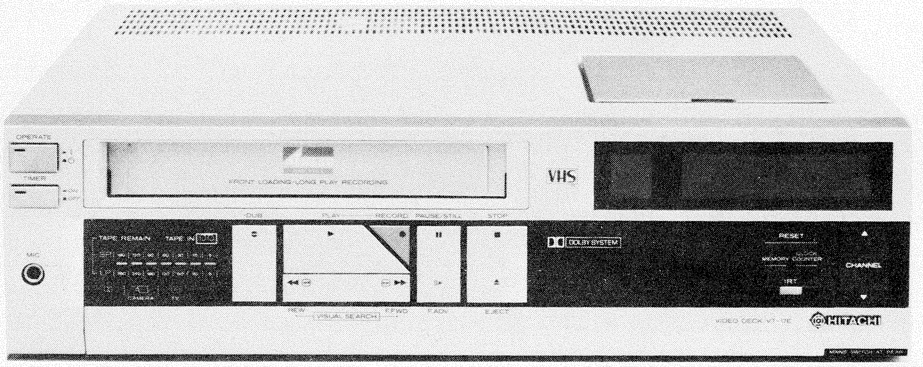
HITACHI
SERVICE MANUAL

TK | No.1889E

VT-17E,E(BS)

Technical Data



VHS
THIS VIDEO DECK IS A VHS TYPE VIDEO RECORDER.
FOR PROPER OPERATION, ONLY VHS TYPE CASSETTES MUST BE USED.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

VIDEO CASSETTE RECORDER

February 1983 **TOKAI WORKS**

COMPARISON WITH CONNECTIONAL MODEL . . . 3
SPECIFICATIONS 5
KEY TO ILLUSTRATIONS 6
SETTING THE TIMER 10
DISASSEMBLY 13
1. REMOVING THE CASE 13
2. REMOVING THE PC BOARDS 15
CHASSIS BLOCK 21
3. NAMES AND LOCATIONS OF MAIN CHASSIS PARTS 22
4. BEFORE DISASSEMBLING PARTS 24
5. REMOVING CHASSIS PC BOARDS 25
6. REMOVING MAIN CHASSIS PARTS 28
6-1 Front loading mechanism 28
6-2 Cylinder motor 29
6-3 Loading motor ass'y 32
6-4 Capstan motor 32
6-5 Flywheel 33
6-6 FF/REW idler arm ass'y 33
6-7 Clutch plate ass'y 34
6-8 Brake slider ass'y 34
6-9 Loading gear ass'y 35
6-10 Tension band/tension arm ass'y 37
6-11 Take up reel disk/supply reel disk 38
6-12 Pressure roller arm bracket ass'y 38
6-13 Guide pole 39
6-14 FE head (full erase head) 39
6-15 AC (Audio/control) head 40
7. ELECTRIC CIRCUIT ADJUSTMENT 41
7-1 REGULATOR/SERVO CIRCUIT 41
1) 9.5V output voltage adjustment 42
2) Cylinder speed adjustment 42
3) Capstan speed adjustment 42
4) Reference oscillation frequency adjustment 43
5) Normal video head CH1/CH2 phase adjustment 43
6) Tracking preset adjustment 44
7) Field video head CH1/CH2 phase adjustment 44
8) Visual sarch speed adjustment (LP mode) 45
9) Visual search speed adjustment (SP mode) 45
10) Additional V syinc signal adjustment 45
7-2 Y/CHROMA CIRCUIT 46
1) Record Y/chroma level adjustment 46
2) APC F0 (4.44MHz) adjustment 47
7-3 WHD CIRCUIT 47
1) Vco adjustment 47
2) X'tal oscillator level adjustment 47
3) Playback chroma level adjustment 48
4) AFC Fo adjustment 48
5) After delay level adjustment 48
7-4 AUDIO CIRCUIT 49
1) Audio playback level adjustment 49
2) Blas trap adjustment 49
3) Audio record blaslevel adjustment 49
4) Line input adjustment 50
5) Record level adjustment 50
7-5 TUNER/IF CIRCUIT (For UK model) . . . 51
1) Carrier filter adjustment 51
2) Audio trap adjustment 52
3) AFC adjustment 52
4) SIF adjustment 52
5) Video output adjustment 53
6) Audio output level adjustment 53
7) AGC adjustment 53
7-6 TUNER/IF CIRCUIT (Except for UK model) 54
1) V-IF adjustment 54
2) V-DET adjustment 55
3) AFT adjustment 55
4) SIF adjustment 55
5) PIF adjustment 56
6) AGC adjustment 56
8. MECHANISM ADJUSTMENT 57
8-1 INSPECTION AND ADJUSTMENT OF FRONT LOADING MECHANISM 57
8-2 ADJUSTING MECHANISM STATE SWITCH INSTALLATION POSITION . . . 58
8-3 TRANSPORT SYSTEM ADJUSTMENT . . 59
1) Reel disk height adjustment 60
2) Tension pole adjustment 61
3) Guide pole height adjustment 62
4) AC head adjustment 63
5) Guide roller height adjustment 65
8-4 COMPRESSION STRENGTH AND TORQUE 66
SCHEMATIC/CIRCUIT BOARD DIAGRAMS 67
SEMICONDUCTOR CONFIGURATION 68

TUNER IF [For UK model]

Schematic diagram 70

Circuit board diagram

IF 74

RF BOOSTER [For UK model]

Schematic diagram 72
Circuit board diagram 72

RF CONVERTER [For UK model]

Schematic diagram 73

TUNER PACK [For UK model]

Schematic diagram 75

TIMER/PROGRAMME PRESET [For UK model]

Schematic diagram 76
Circuit board diagram 79

TUNER IF [Except for UK model]

Schematic diagram 82

Circuit board diagram

IF 86
TUNER IF 87

RF BOOSTER [Except for UK model]

Schematic diagram 84
Circuit board diagram 84

RF CONVERTER [Except for UK model]
  Schematic diagram 85
TUNER PACK [Except for UK model]
  Schematic diagram 85
TIMER/PROGRAMME PRESET
[Except for UK model]
  Schematic diagram 88
  Circuit board diagram 91
RECTIFIER
  Schematic diagram 94
  Circuit board diagram 97
BACK UP
  Schematic diagram 95
  Circuit board diagram 98
JACK/REMOTE CONTROL [For UK model]
  Schematic diagram 100
  Circuit board diagram 103
JACK/REMOTE CONTROL [Except for UK model]
  Schematic diagram 106
  Circuit board diagram 109
Y/CHROMA [For UK model]
  Schematic diagram 113
  Circuit board diagram 120
Y·CHROMA CIRCUIT WAVEFORM DIAGRAM
[For UK model] 117
Y/CHROMA [Except for UK model]
  Schematic diagram 123
  Circuit board diagram 130
Y·CHROMA CIRCUIT WAVEFORM DIAGRAM
[Except for UK model] 127
WHD
  Schematic diagram 133
  Circuit board diagram 135
AUDIO
  Schematic diagram 137
  Circuit board diagram 139
REGULATOR/SERVO
  Schematic diagram 141
  Circuit board diagram 147
SERVO WAVEFORM DIAGRAM 145
SYSTEM CONTROL/OPERATION SWITCH
[For UK model]
  Schematic diagram 151
  Circuit board diagram
    OPERATION SWITCH 155
    SYSTEM CONTROL 159
SYSTEM CONTROL CIRCUMFERENCE
CIRCUIT BOARD
  Circuit board diagram 157
SYSTEM CONTROL/OPERATION SWITCH
[Except for UK model]
  Schematic diagram 163
  Circuit board diagram
    SYSTEM CONTROL 167
    OPERATION SWITCH 170
REPLACEMENT PARTS LIST 172

EXPLODED VIEWS
  Cabinet Section 179
  Chassis Section 181
  Front Loading Mechanism Section 184

COMPARISON WITH CONVENTIONAL MODEL

Item			VT-11E, E(BS)	VT-17E, E(BS)
Function	Operation mode (Operation sw.)		1. Stop 2. Record 3. Play 4. Fact forward 5. Rewind 6. FWD visual search 7. REV. visual search 8. Pause	← ← ← ← ← ← ← 8. Pause/still 9. F. ADV.
	Remote control		8-mode/6-button wired	12 mode/13-button
	Recording speed		1 mode	2 modes (SP, LP)
	Play speed		3 modes 1. Normal 2. FWD/REV visual search 3. Still	5 modes 1. SP 2. LP 3. FWD/REV visual search 4. Pause/still 5. F. ADV.
	Tape counter		4-digit electronic (Also used for timer display)	←
Type of chassis			**"U" type chassis**	**"U" type chassis + Front loading mechanism**
Circuit configuration	Servo circuit	Speed control system (Main control IC type)	Analog system (HA-11749)	←
		Phase control system (Main control IC type)	Digital system (HA-11747)	←
		Cylinder motor (Main control IC type)	1-phase DD motor (HA-13402)	←
		Capstan motor (Main control IC type)	DC motor (Discrete composition)	←
	System control circuit	Main control IC type	HD38750A79	HD38800B07 (Main μP) HD38702A25 (Sub- μP) HD38800B03 (Front loading μP) M54543L (Motor driver) M54543L (Front loading driver)
		Infrared remote control	✕	○
		SP/LP speed select switch	✕	○

Item			VT-11E, E(BS)	VT-17E, E(BS)
	Tuner circuit	Channel range	8-channel mechanical lock (VT-11E(BS)) 12-channel mechanical lock (VT-11E)	8-channel electronic lock (VT-17E(BS)) 12-channel electronic lock (VT-17E)
	Video circuit	Main constituent ICs	HT4207 (IC201) HT4208 (IC202) HT4219 (IC203)	HT4237 (IC201) HT4238 (IC202) HT4239 (IC203)
		Adding V sync circuit	MSL9378RS	×
		Noise canceller circuit	×	M51454L (IC204)
	Audio circuit	Main constituent IC	BA5102	HA1406 (IC401) TA7629P (IC403) μ P D4066 (IC402)
		Dolby NR function	×	○
	Jack circuit	Main constituent IC	×	BA7026 (IC1701) μP D4066 (IC1702) LA7016 (IC1703)
	Timer circuit	Programme	1-programme/10-day	5-programme/2-week
		Back-up circuit (Power failure compensation circuit)	×	○
	WHD circuit	Main constituent IC	×	BA7022 (IC1201) LA7808 (IC1202) μ P D4011 (IC1204, 05, 06) LA7016 (IC1203)

SPECIFICATIONS

	VT-17E(BS)	VT-17E
Format:	VHS PAL standard	←
Video Recording System:	Rotary two head helical scan azimuth recording	←
Video Signal System:	PAL colour (System I) and CCIR monochrome signals 625 lines	PAL colour (System B and G) and CCIR monochrome signals 625 lines.
Tape Speed:	23.39 mm/sec. (SP) 11.7 mm/sec, (LP)	←
Tape Width:	12.7 mm	←
Operation Temperature:	5 °C to 40 °C	←
Recording Time:	240 min (with Hitachi E-240 cassette) (SP) 430 min (") (LP)	← ←
RF Input:	UHF channels 21 – 69	UHF: channels 21 – 69 VHF: channels 2 – 12
RF Output:	UHF channel 37 (30 to 39ch adjustable)	←
Camera Input:	1.0Vp-p 75 ohms unbalanced	←
Video Output:	1.0Vp-p 75 ohms unbalanced	←
S/N Ratio (Video):	43 dB	←
S/N Ratio (Audio):	40 dB	←
Horizontal Resolution:	Colour 3 MHz (more than 240 lines)	←
Audio Input:	–20 dBm/50 kohms	←
Mic Input:	–69 dBm/10 kohms	←
Audio Output:	–6 dBm/10 kohms	←
Audio Frequency Range:	70 Hz to 12 kHz	←
Power Supply:	AC240V 50 Hz	AC220V 50 Hz
Power Consumption:	39W 10W (Timer and Heater)	← ←
Cabinet Size:	435 mm(W) x 119 mm(H) x 370 mm(D)	←
Weight:	12 kg	←

SAFETY PRECAUTION

The following precautions should be observed when servicing.

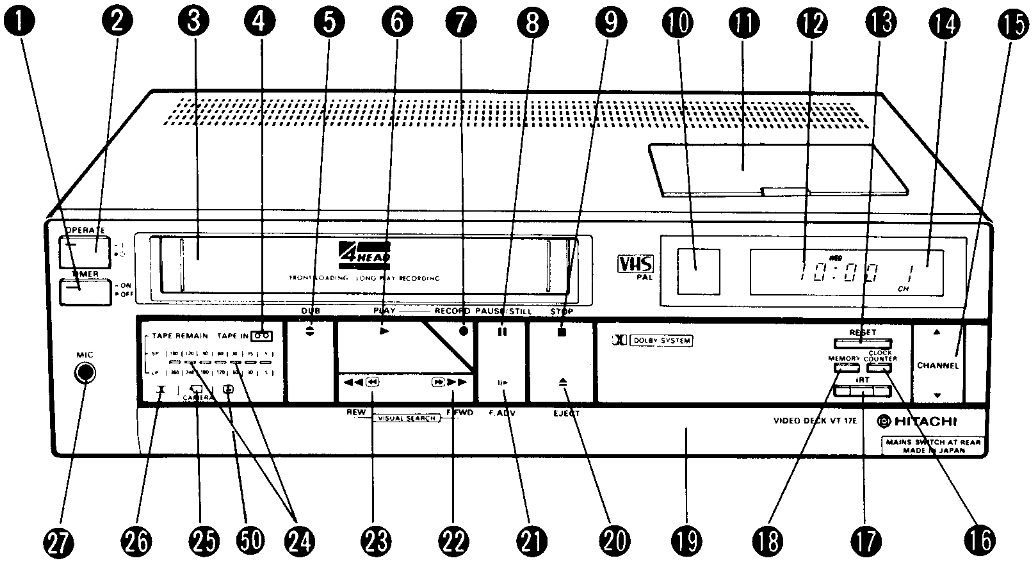
1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi replacement parts. Especially critical parts in the power circuit block should not be replaced with other makes. Critical parts are marked with ⚠ in the schematic diagram and circuit board diagram.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to a scertain that it is completely safe to operate without danger of electrical shock.

Note:

1. The picture may loose colour in the "LP" still play mode; this is not a fault.
2. Switch over the functions of the VTR using the remote control unit when servicing the system control circuit board.

KEY TO ILLUSTRATIONS

VT-17E



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OPERATE
TIMER
ON
OFF
MIC
4 HEAD
FRONT LOADING LONG PLAY RECORDING
DUB
PLAY
RECORD
PAUSE/STILL
STOP
VHS
PAL
10:00 1
CH
TAPE REMAIN
TAPE IN
SP
LP
CAMERA
REW
VISUAL SEARCH
F.FWD
F.ADV
EJECT
DOLBY SYSTEM
RESET
CLOCK
MEMORY COUNTER
IRT
CHANNEL
VIDEO DECK VT 17E
HITACHI
MAINS SWITCH AT REAR
MADE IN JAPAN
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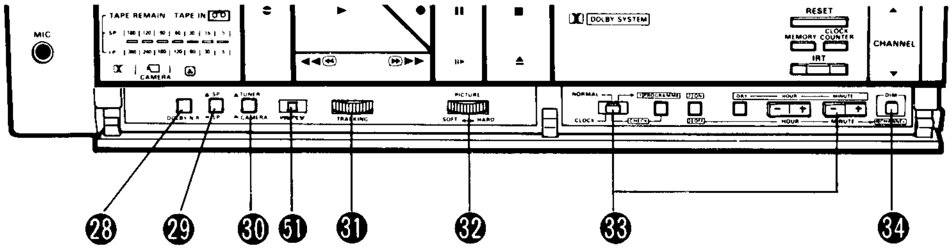

MIC
TAPE REMAIN
TAPE IN
CAMERA
DOLBY SYSTEM
RESET
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MEMORY COUNTER
IRT
CHANNEL
DOLBY N.R.
TUNER
CAMERA
TRACKING
PICTURE
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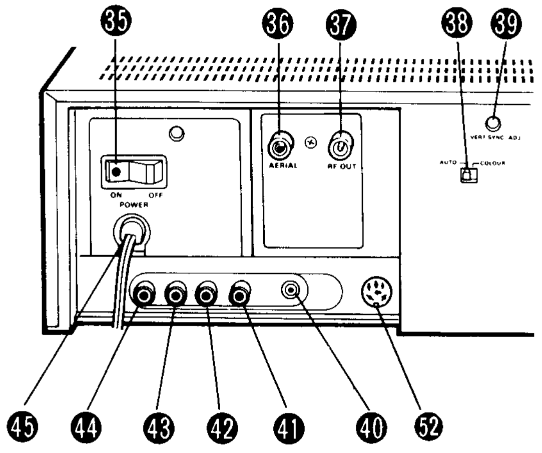

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ON
OFF
POWER
AERIAL
RF OUT
VERT SYNC ADJ
AUTO
COLOUR
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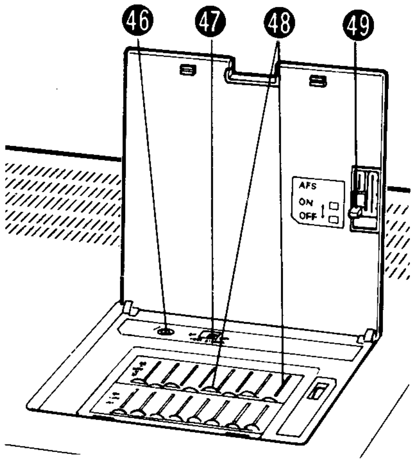
40
52



46
47
48
49
AFS
ON
OFF

① **TIMER SWITCH**
Press after programming Digital Clock.

② **OPERATE SWITCH**
Turn system power on and off.

③ **CASSETTE COMPARTMENT**

④ **TAPE-IN INDICATOR**
Lights when cassette is located in the compartment.

⑤ **AUDIO DUB BUTTON (≑)**
Press AUDIO DUB button and while holding AUDIO DUB, press PLAY button to audio dub.

⑥ **PLAY BUTTON (►)**

⑦ **RECORD BUTTON (●)**
Press RECORD button and while holding RECORD, press PLAY button to record.

⑧ **PAUSE/STILL BUTTON (❚❚)**
Press to pause during recording and playback.
Press to view still frame during playback.
Press again to release.

⑨ **STOP BUTTON (■)**
The STOP button must be pressed between "RECORD" and any other operation.

⑩ **INFRARED RAY RECEIVING SECTION**
Receives the infrared ray from remote control unit.

⑪ **PRE-TUNING ACCESS DOOR**
Open this door and set the channel.

⑫ **TIMER/COUNTER DISPLAY INDICATOR**
This shows the tape position or the time with a 24-hour display.

⑬ COUNTER RESET BUTTON
To reset counter to "0000".

⑭ CHANNEL INDICATOR DISPLAY
This shows channel number corresponding to channel selected.

⑮ CHANNEL SELECT BUTTON
Select the channels you wish to view or record by pressing this button.

⑯ CLOCK/COUNTER SELECT BUTTON
Press to switch from clock display to counter display.

⑰ INSTANT RECORDING TIMER BUTTON (IRT)
This allows unattended recording.
Timer will switch VTR off automatically at a preselected time. This is convenient when you go out during recording.

⑱ COUNTER MEMORY BUTTON
When this switch is ON, tape will stop at approximately "0000" reading.

⑲ SECONDARY CONTROL DOOR

⑳ EJECT BUTTON (⏏)
Press to remove cassette. The STOP button must be pressed before "EJECT".

㉑ FRAME ADVANCE BUTTON
Press to view tape one frame at a time. Hold down button to advance frames continuously.
Operates only after PAUSE/STILL button has been pressed.

㉒ FAST FORWARD/VISUAL SEARCH BUTTON (⏩▶▶)
Press to activate fast forward.
Press this button during playback.
Forward playback picture at high speed can be seen.

㉓ REWIND/VISUAL SEARCH BUTTON (◀◀⏪)
Press to start rewind.
Press this button during playback.
Reverse playback picture at high speed can be seen.

㉔ TAPE REMAINING INDICATORS
This is useful to determine the remaining time available for recording.

㉕ CAMERA INDICATOR
Lights when TUNER/CAMERA select switch is in the "CAMERA (▬)" position.

㉖ DOLBY NR INDICATOR
Lights when DOLBY NR switch is on.

㉗ MICROPHONE JACK
For microphone.

㉘ DOLBY NR SWITCH
If you want to reduce high frequency hiss, press this switch to in before recording, then begin recording and playback.

㉙ SPEED SELECT SWITCH
Select standard play (SP) or long play (LP). Only use this switch when recording. Playback speed automatically corresponds with recording speed.

㉚ TUNER/CAMERA SELECT SWITCH
Selects recording signal from the tuner, camera or external source.

㉛ TRACKING CONTROL KNOB
To minimize noise in playback.

㉜ PICTURE CONTROL
Adjust the picture so it is easy to see.

㉝ TIMER CONTROLS

㉞ DIMMER BUTTON
Press this button and select the brightness of timer display.

㉟ MAINS POWER SWITCH
Mains Power switch ON-OFF.

㊱ AERIAL INPUT SOCKET
Connect external antenna.

㊲ RF OUTPUT
Connect to TV antenna (aerial) input.

㊳ VIDEO MODE SWITCH
AUTO: Circuits are automatically switched to colour or black/white mode. This position is sufficient for most purposes.
COLOUR: When recording PAL signal in an area very far from broadcasting station, the recorded picture may lose colour. In this case, set to this position.

㊴ VERTICAL JITTER CONTROL (VERT SYNC ADJ)
Correct vertical "jitter" if it occurs during still picture playback.

㊵ CAMERA PAUSE JACK
Connect Camera Pause cable.

㊶ VIDEO IN
Receives video signal from a video camera or another VTR.

㊷ VIDEO OUT
Permits video connection of your unit to a monitor or another VTR.

㊸ AUDIO IN
Receives audio signals from a camera, external sound equipment, or from another VTR.

㊹ AUDIO OUT
Permits audio connection of your unit to a monitor or another VTR.

㊺ MAINS LEAD

㊻ RF CHANNEL CONTROL
Turn TEST ON/OFF SWITCH to "ON" and rotate this control to set video channel correctly.

㊼ TEST ON/OFF SWITCH
Turn this switch ON and check that the video channel of your TV set is correct.
After setting, set this switch to OFF.

㊽ PRE-TUNING CONTROL

㊾ AFS TAB
Place AFS tab in "ON" position and close the door.
Automatic Fine Tuning is engaged.
Note: In case of extreme interference or a very weak signal, turn off AFS by placing the AFS tab in "OFF" position. Then fine tune for the best picture. Do not turn AFS on after fine tuning.

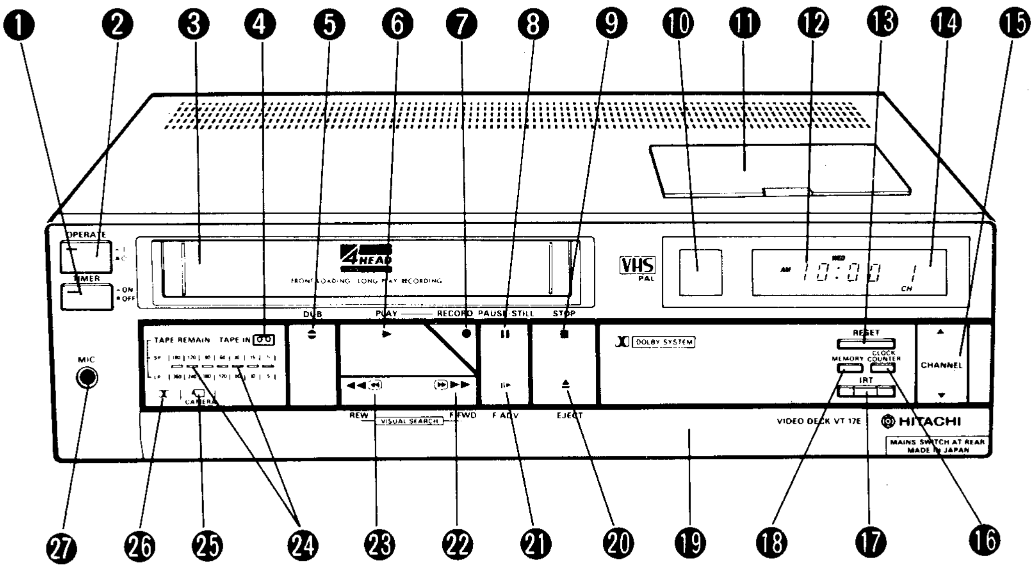
㊿ TV INDICATOR
Lights when INPUT SELECTOR SWITCH is in the "TV" position.

(51) INPUT SELECTOR SWITCH
Select this switch to appropriate position.

(52) AUDIO/VIDEO JACK
Connect this jack to the A/V jack 0 TV with Audio/Video Cable (Optional Accessory)

KEY TO ILLUSTRATIONS

VT-17E(BS)



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OPERATE
TIMER
ON
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4 HEAD
FRONT LOADING LONG PLAY RECORDING
VHS
PAL
DUB
PLAY
RECORD
PAUSE/STILL
STOP
TAPE REMAIN
TAPE IN
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CAMERA
MIC
REW
VISUAL SEARCH
F.FWD
F.ADV
EJECT
DOLBY SYSTEM
RESET
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MEMORY COUNTER
IRT
CHANNEL
VIDEO DECK VT 17E
HITACHI
MAINS SWITCH AT REAR
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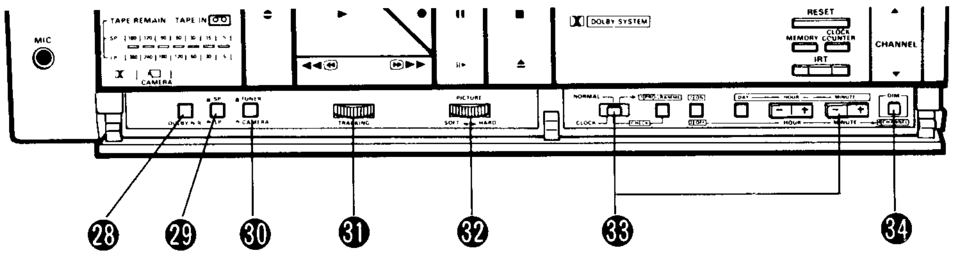

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TAPE IN
CAMERA
DOLBY SYSTEM
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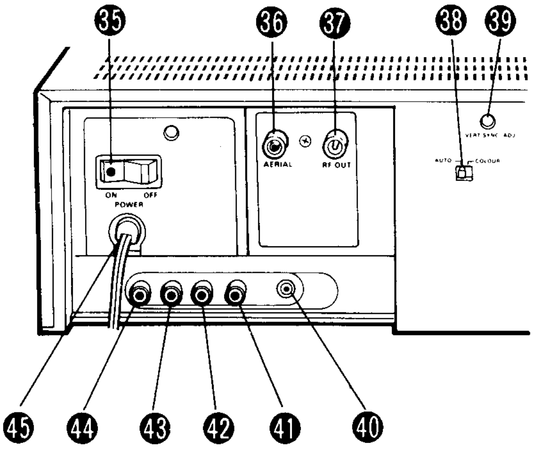

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ON
OFF
POWER
AERIAL
RF OUT
VERT SYNC ADJ
AUTO
COLOUR
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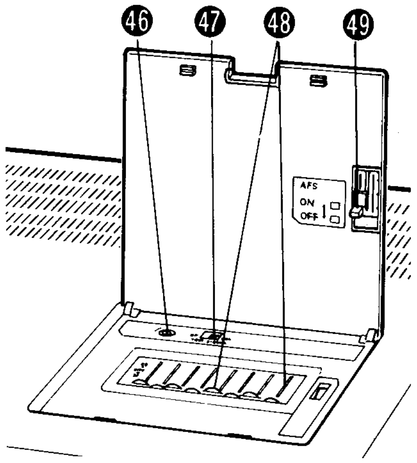


46
47
48
49
AFS
ON
OFF

① **TIMER SWITCH**
Press after programming Digital Clock.

② **OPERATE SWITCH**
Turn system power on and off.

③ **CASSETTE COMPARTMENT**

④ **TAPE-IN INDICATOR**
Lights when cassette is located in the compartment.

⑤ **AUDIO DUB BUTTON (≐)**
Press AUDIO DUB button and while holding AUDIO DUB, press PLAY button to audio dub.

⑥ **PLAY BUTTON (▶)**

⑦ **RECORD BUTTON (●)**
Press RECORD button and while holding RECORD, press PLAY button to record.

⑧ **PAUSE/STILL BUTTON (❚❚)**
Press to pause during recording and playback.
Press to view still frame during playback.
Press again to release.

⑨ **STOP BUTTON (■)**
The STOP button must be pressed between "RECORD" and any other operation.

⑩ **INFRARED RAY RECEIVING SECTION**
Receives the infrared ray from remote control unit.

⑪ PRE-TUNING ACCESS DOOR
Open this door and set the channel.

⑫ TIMER/COUNTER DISPLAY INDICATOR
This shows the tape position or the time with a 12-hour display.

⑬ COUNTER RESET BUTTON
To reset counter to "0000".

⑭ CHANNEL INDICATOR DISPLAY
This shows channel number corresponding to channel selected.

⑮ CHANNEL SELECT BUTTON
Select the channels you wish to view or record by pressing this button.

⑯ CLOCK/COUNTER SELECT BUTTON
Press to switch from clock display to counter display.

⑰ INSTANT RECORDING TIMER BUTTON (IRT)
This allows unattended recording.
Timer will switch VTR off automatically at a preselected time. This is convenient when you go out during recording.

⑱ COUNTER MEMORY BUTTON
When this switch is ON, tape will stop at approximately "0000" reading.

⑲ SECONDARY CONTROL DOOR

⑳ EJECT BUTTON (⏏)
Press to remove cassette. The STOP button must be pressed before "EJECT".

㉑ FRAME ADVANCE BUTTON
Press to view tape one frame at a time. Hold down button to advance frames continuously.
Operates only after PAUSE/STILL button has been pressed.

㉒ FAST FORWARD/VISUAL SEARCH BUTTON (⏩►►)
Press to activate fast forward.
Press this button during playback.
Forward playback picture at high speed can be seen.

㉓ REWIND/VISUAL SEARCH BUTTON (◄◄⏪)
Press to start rewind.
Press this button during playback.
Reverse playback picture at high speed can be seen.

㉔ TAPE REMAINING INDICATORS
This is useful to determine the remaining time available for recording.

㉕ CAMERA INDICATOR
Lights when TUNER/CAMERA select switch is in the "CAMERA (▬)" position.

㉖ DOLBY NR INDICATOR
Lights when DOLBY NR switch is on.

㉗ MICROPHONE JACK
For microphone.

㉘ DOLBY NR SWITCH
If you want to reduce high frequency hiss, press this switch to in before recording, then begin recording and playback.

㉙ SPEED SELECT SWITCH
Select standard play (SP) or long play (LP). Only use this switch when recording. Playback speed automatically corresponds with recording speed.

㉚ TUNER/CAMERA SELECT SWITCH
Selects recording signal from the tuner, camera or external source.

㉛ TRACKING CONTROL KNOB
To minimize noise in playback.

㉜ PICTURE CONTROL
Adjust the picture so it is easy to see.

㉝ TIMER CONTROLS

㉞ DIMMER BUTTON
Press this button and select the brightness of timer display.

㉟ MAINS POWER SWITCH
Mains Power switch ON-OFF.

㊱ AERIAL INPUT SOCKET
Connect external antenna.

㊲ RF OUTPUT
Connect to TV antenna (aerial) input.

㊳ VIDEO MODE SWITCH
AUTO: Circuits are automatically switched to colour or black/white mode. This position is sufficient for most purposes.
COLOUR: When recording PAL signal in an area very far from broadcasting station, the recorded picture may lose colour. In this case, set to this position.

㊴ VERTICAL JITTER CONTROL (VERT SYNC ADJ)
Correct vertical "jitter" if it occurs during still picture playback.

㊵ CAMERA PAUSE JACK
Connect Camera Pause cable.

㊶ VIDEO IN
Receives video signal from a video camera or another VTR.

㊷ VIDEO OUT
Permits video connection of your unit to a monitor or another VTR.

㊸ AUDIO IN
Receives audio signals from a camera, external sound equipment, or from another VTR.

㊹ AUDIO OUT
Permits audio connection of your unit to a monitor or another VTR.

㊺ MAINS LEAD

㊻ RF CHANNEL CONTROL
Turn TEST ON/OFF SWITCH to "ON" and rotate this control to set video channel correctly.

㊼ TEST ON/OFF SWITCH
Turn this switch ON and check that the video channel of your TV set is correct.
After setting, set this switch to OFF.

㊽ PRE-TUNING CONTROL

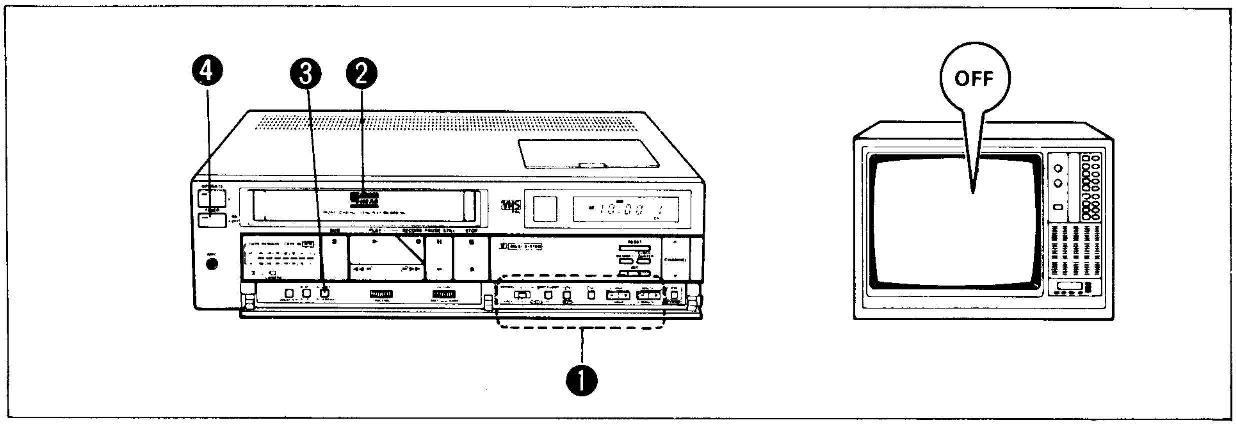
㊾ AFS TAB
Place AFS tab in "ON" position and close the door.
Automatic Fine Tuning is engaged.
Note: In case of extreme interference or a very weak signal, turn off AFS by placing the AFS tab in "OFF" position. Then fine tune for the best picture. Do not turn AFS on after fine tuning.

SETTING THE TIMER

The timer indication method differs between the VT-17E and VT-17E(BS).
For discrimination between "morning" and "afternoon", the VT-17E(BS) has an AM/PM indicator while the VT-17E uses a 24-hour clock.
Time and programme setting procedures are the same except for the indication shown above.
Time and programme setting procedures are shown below using the VT-17E(BS) as an example.

TIMER RECORDING (UNATTENDED RECORDING)

The programmable electronic clock/timer permits the unattended recording of up to 6 preselected programmes. It can be preset up to 14 days in advance to record your favorite programmes. It turns the unit on and off and changes channels automatically.



❶ Set the programme timer.
"START (ON) TIME", "STOP (OFF) TIME", "DAY" etc. See next page.

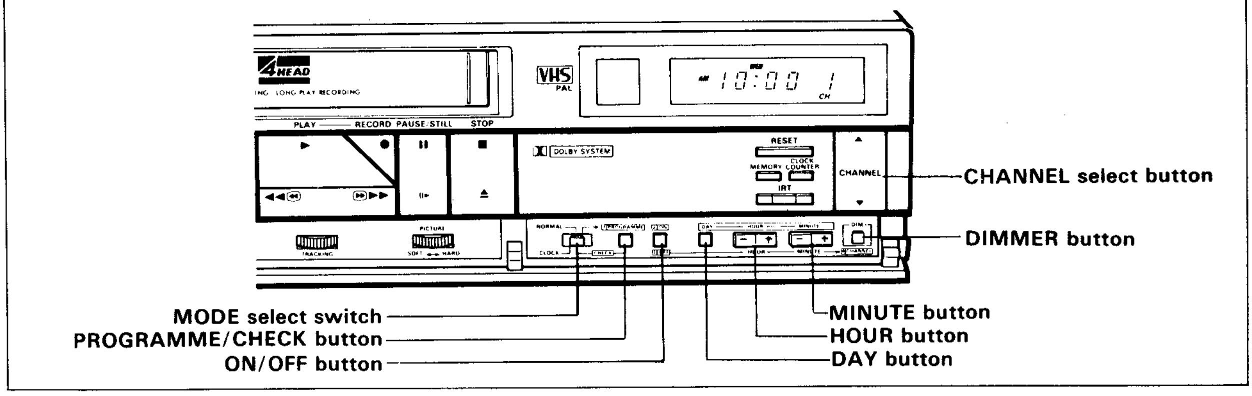
❷ Insert the Cassette.
Be sure to check that the record safety tab is not missing. If the record safety tab is missing, recording will not begin.

❸ Set the TUNER/CAMERA select switch to "TUNER".

❹ Set TIMER switch of video deck to ON. Now recording will begin automatically at the start time.

Note:
- It is not necessary to press PLAY and RECORD buttons.
- When the TIMER switch is on, your video deck cannot be operated manually.
- **If the record safety tab is missing, the TIMER indicator will flash to warn you.**
- If you want to stop during recording with the timer, set the TIMER switch to OFF then press the STOP button.

To monitor the programme to be recorded
1. Turn on the TV and set the channel of your TV to CH37 (or your video channel).
2. Turn off the TIMER switch and turn on the OPERATE switch of the video deck.
3. Press the CHANNEL select button to set to the channel to be recorded.
4. After checking the programme, turn off the TV and set the TIMER switch of the video deck to ON.



TO SET THE CLOCK TO PRESENT TIME OF DAY

1. Set the MODE select switch to "CLOCK".
2. Press the DAY button to select the present day of the week.
3. Press the HOUR button (+ or −) to select the correct hour.
   Hold the button down to advance rapidly. Be sure AM/PM indicator is correct.
4. Press the MINUTE button (+ or −) to select correct minute.
   Hold button down to advance rapidly.
5. Set the MODE select switch to "NORMAL".
   Now the clock will operate.

Note: 1. When the Mains lead is first connected to an AC outlet or when a power failure occurs for more than about 5 minutes, the Timer display flashes "SUN 12:00 AM".
When a power failure occurs or the mains lead is disconnected from the AC outlet for a short time (approximately 5 minutes) with TIMER switch "ON", the "PF" indicator in the timer display lights to warn you.
Check that the present time is correct.
2. The brightness of the Timer display can be selected with the DIMMER button.
3. Be sure to set the MODE select switch to "NORMAL" after programming or the clock does not operate and channel selection cannot be done.

TO SET THE PROGRAMMABLE TIMER

Before setting the programmable timer, be sure to check the clock shows the correct present time.

1. Set the MODE select switch to "PROGRAMME" (right side).
   Programme indicators (1 through 5 and W) flash to indicate memory positions that have not been programmed. If a memory has been programmed, the indicator will not flash.
   Note: You should determine which memory positions have not been programmed before entering new programming information. New information automatically erases previous programmed data.
2. Press the PROGRAMME/CHECK button until the desired programme indicator lights.
   To record a programme every week, select the Programme indicator "W".
3. Press the ON/OFF button.
4. Select the day for recording by pressing the DAY button until the desired Day indicator lights.
   Make sure the desired week indicator (1W or 2W) or day indicator lights. "1W" means within 7 days from the present day, after day 8, it should be "2W".
   To record every day, press the DAY button until all the day indicators light.
5. Select the hour and minute for the recording to start by pressing the HOUR and MINUTE buttons.
   Press the button marked "−" if you go past the desired time.
   Hold down buttons to advance rapidly.
   Make sure AM/PM indicator is correct.
6. Press the ON/OFF button once, then set the stop time (hour and minute) as in step 5. Make sure the AM/PM indicator is correct.
7. Choose the channel to be recorded by pressing the CHANNEL select button.
8. To set the next programme, repeat steps 2 through 7.
9. After programming, set the MODE select switch to "NORMAL".
   The MODE select switch must be set to "NORMAL" or the clock will not show the present time fo day.

Note: The repeating programme such as weekly or daily etc. is held in memory after 2 weeks unless the programme is otherwise cleared.

Programming errors

If programmes overlap, the video deck will select the programme with the earlier start time. When that programme is over, the video deck will switch to the next programme.
If the start times are the same, the video deck will select the programmes in numerical order.

To correct programme errors

It is possible to correct the programme information when you find an error before returning the MODE select switch to "NORMAL". When the display indicates the stop time, stop time and channel for recording can be corrected. The start time and day for recording can be corrected when the start time is indicated.
The start time and stop time indications are displayed alternately by pressing the ON/OFF button.

To clear programme

1. Set the MODE select switch to "PROGRAMME" (right side).
2. Press the PROGRAMME/CHECK button until to desired programme indicator lights.
3. The programme will be erased when the ON/OFF button is pressed.

To check programming

The programming can be checked only when the MODE select switch is set to "NORMAL".

1. Press the PROGRAMME/CHECK button until the desired programme indicator is indicated on the display.
2. First the display shows start time, day for recording and channel to be recorded. Then the display shows the stop time.
3. After a few seconds, the display returns to the present time or counter reading.

DISASSEMBLY

1. REMOVING THE CASE

1-1. Programme preset cover (Fig. 1)

1) Open the programme preset cover and pull it in the direction of arrow ① to remove it.

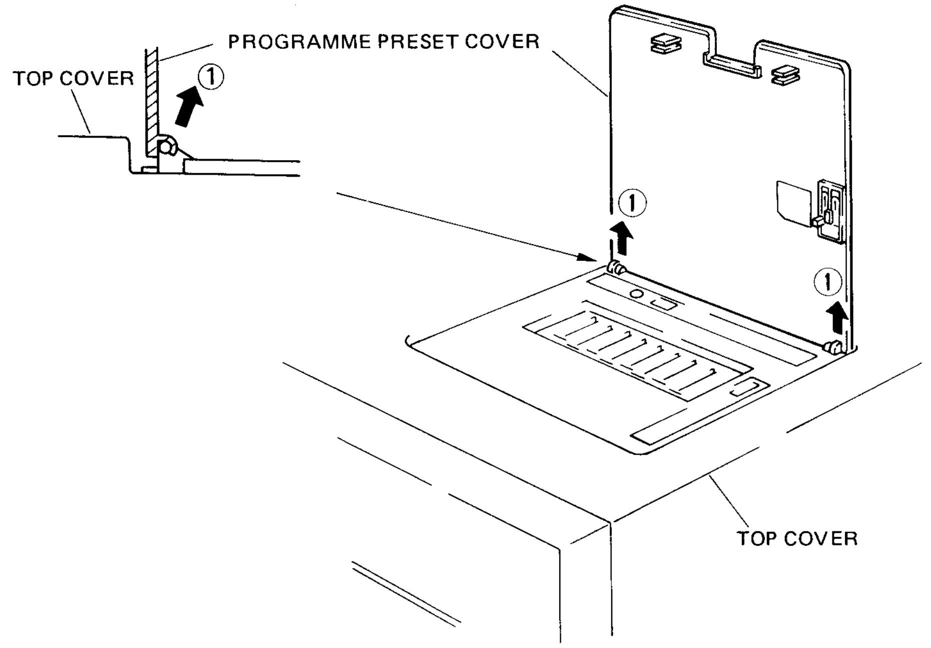
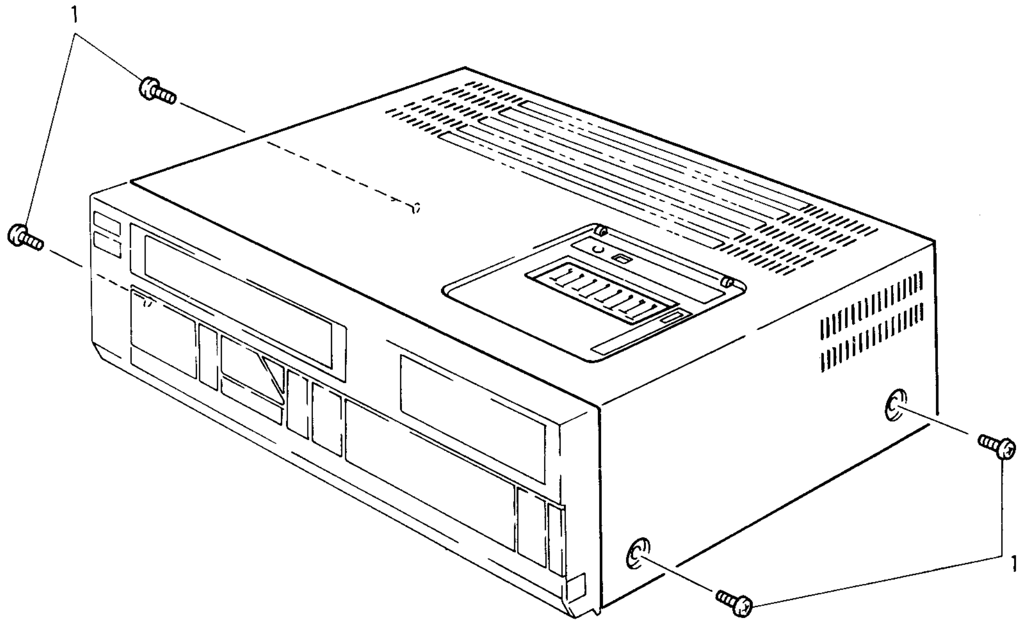

PROGRAMME PRESET COVER
TOP COVER
①
①
①
TOP COVER

Fig. 1

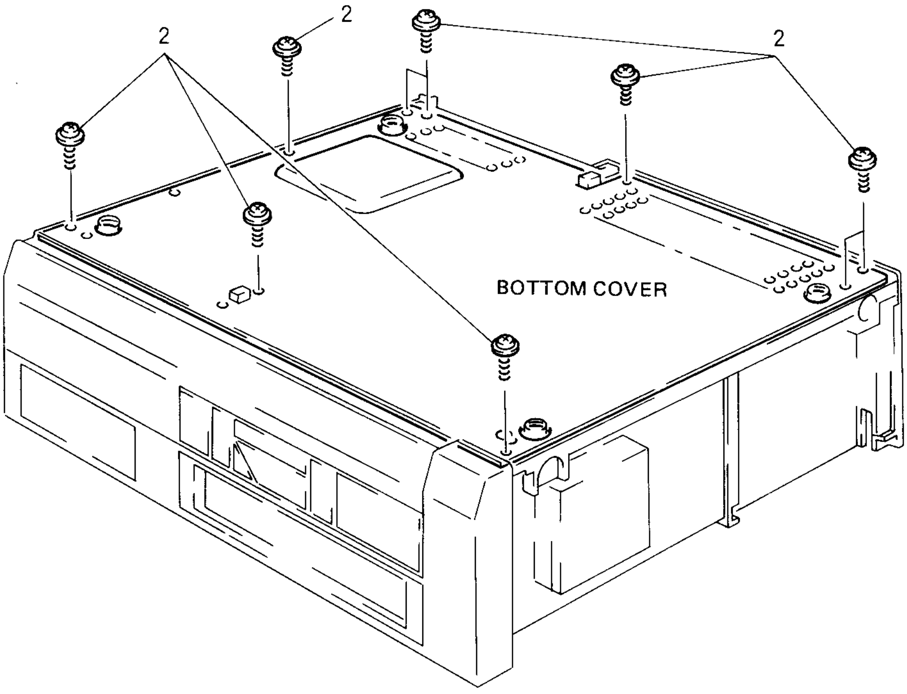
1-2. Top cover (Fig. 2)

1) Remove 4 screws (1).
2) Lift the rear of the top cover first and then lift the whole top cover to remove it.



1-3. Bottom cover (Fig. 3)

1) Remove 9 screws (2).

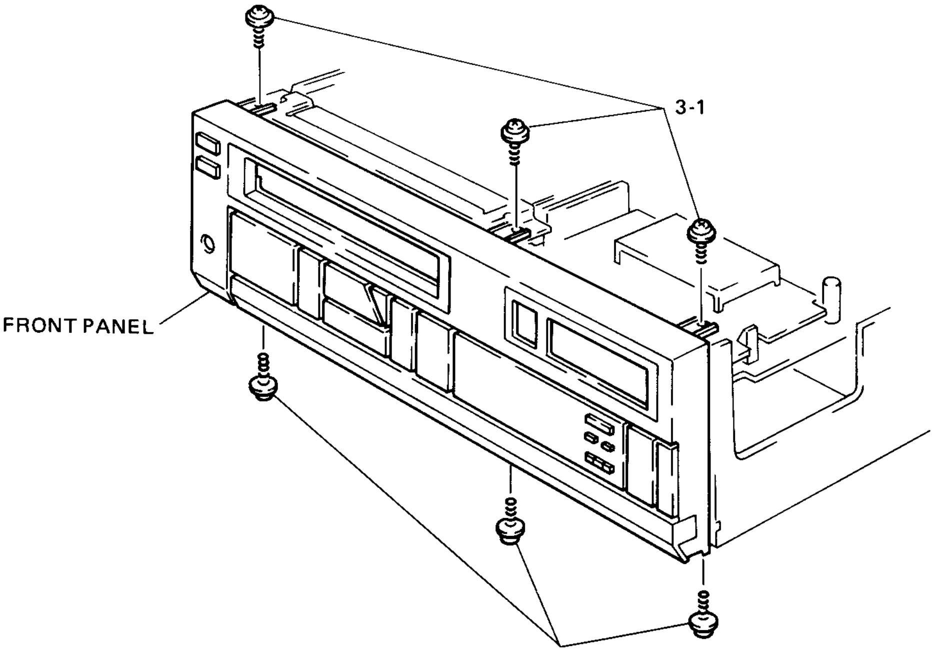


2
2
2
BOTTOM COVER

Fig. 3

1-4. Front panel (Fig. 4)

1) Remove the top cover (Item 1-2).
2) Remove the bottom cover (Item 1-3).
3) Remove 6 screws (3-1, 3-2).



3-1
FRONT PANEL
3-2

Fig. 4

1-5. Rear cover (Fig. 5)

1) Remove the top cover (Item 1-2).
2) Remove 3 screws (4).

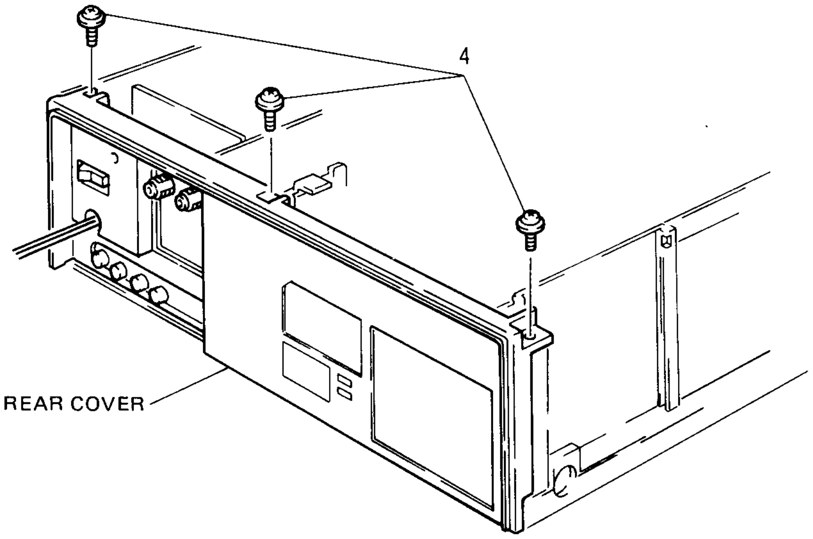

4
REAR COVER

Fig. 5

2. REMOVING THE PC BOARDS

2-1. Names and locations of PC Boards

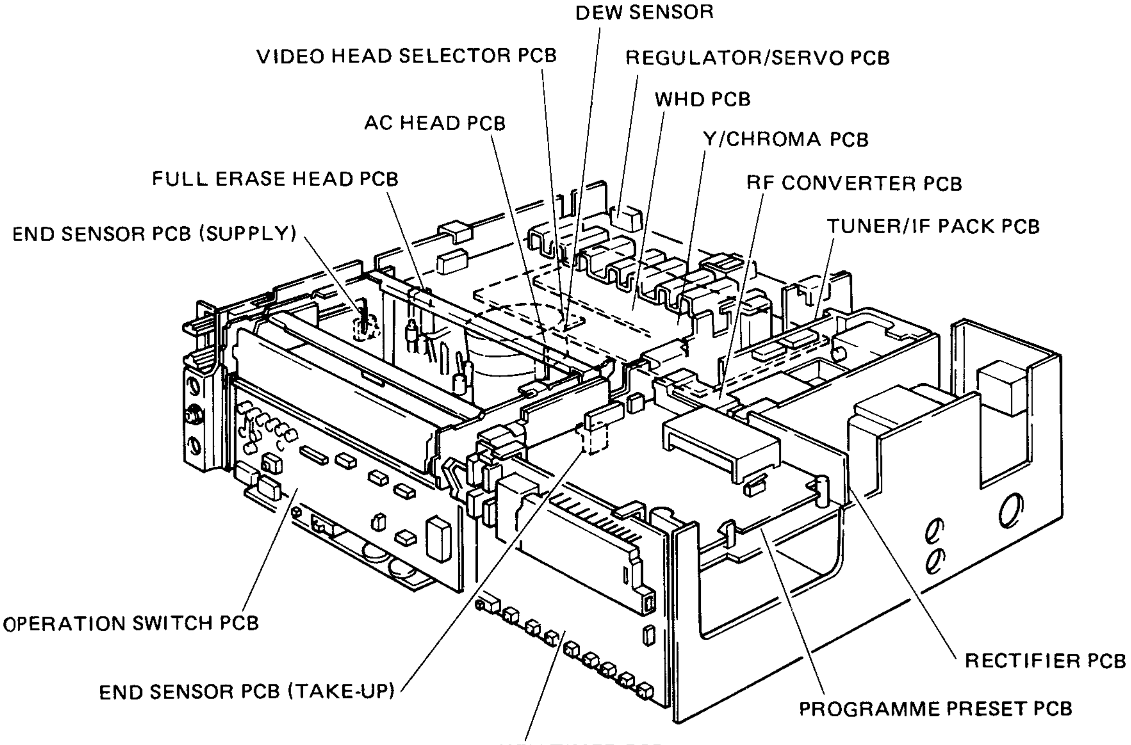

DEW SENSOR
VIDEO HEAD SELECTOR PCB
REGULATOR/SERVO PCB
WHD PCB
AC HEAD PCB
Y/CHROMA PCB
FULL ERASE HEAD PCB
RF CONVERTER PCB
END SENSOR PCB (SUPPLY)
TUNER/IF PACK PCB
OPERATION SWITCH PCB
RECTIFIER PCB
END SENSOR PCB (TAKE-UP)
PROGRAMME PRESET PCB
KEY-TIMER PCB

Fig. 6 (Top)

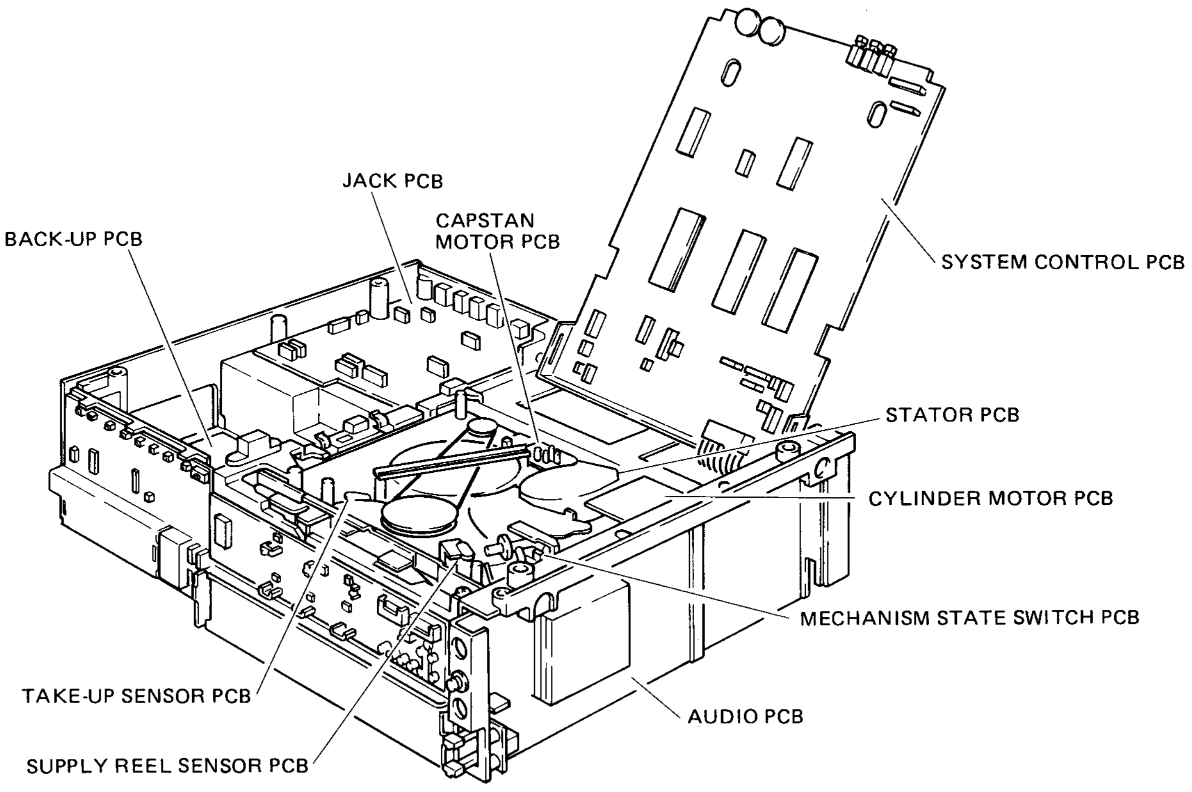

JACK PCB
CAPSTAN MOTOR PCB
BACK-UP PCB
SYSTEM CONTROL PCB
STATOR PCB
CYLINDER MOTOR PCB
MECHANISM STATE SWITCH PCB
TAKE-UP SENSOR PCB
AUDIO PCB
SUPPLY REEL SENSOR PCB

Fig. 7 (Bottom)

2-2. Operation switch PC Boards (Fig. 8)

1) Remove the top cover (Item 1-2).
2) Remove the front panel (Item 1-4).
3) Push up 3 stoppers (1) in the direction of the arrow to remove the PC Board and the stoppers, and then lift the PC Board in the direction of arrow (2).

* Assemble the operation switch PC Board in the reverse procedure to disassembly, and check that all the operation buttons work normally after assembly.

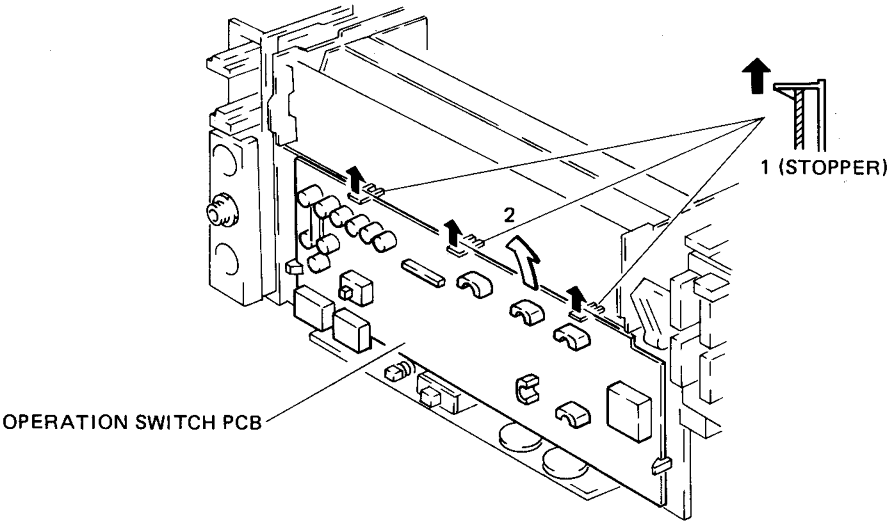

1 (STOPPER)
2
OPERATION SWITCH PCB

Fig. 8

2-3. Programme preset PC Board/Key-timer PC Board (Fig. 9, Fig. 10)

Programme preset PC Board

1) Remove the top cover (Item 1-2).
2) Remove the front panel (Item 1-4).
3) Disconnect 3 connectors (3) of the programme preset PC Board.
4) Push 4 stoppers (4) which fix the programme preset PC Board in the direction of the arrow to release the engagement between the PC Board and stoppers, and then lift the board to remove it.

Key-timer PC Board

5) Disconnect 5 connectors (5) of the timer PC Board.
6) Release the engagement between the PC Board and stoppers while pushing 2 stoppers (6) of the timer PC Board, and then release the engagement between the lower 3 stoppers (7) and the PC Board and lift the PC Board in the direction of the arrow Ⓐ.

* Assemble the programme preset PC Board and the timer PC Board in the reverse procedure to disassembly and check that all the operation buttons work normally after assembly.

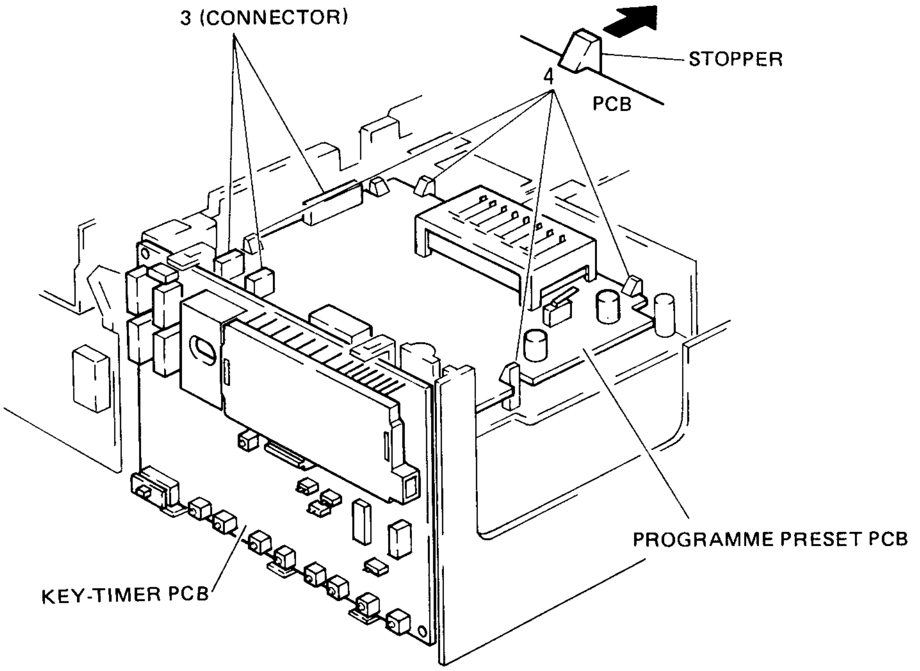

3 (CONNECTOR)
STOPPER
4
PCB
PROGRAMME PRESET PCB
KEY-TIMER PCB

Fig. 9

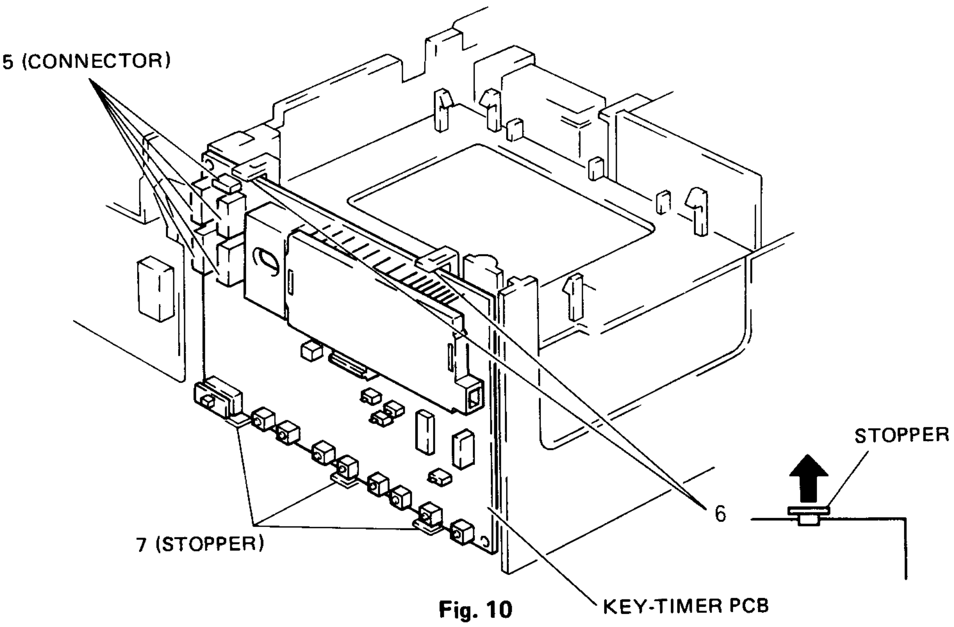

5 (CONNECTOR)
STOPPER
6
7 (STOPPER)
KEY-TIMER PCB

Fig. 10

2-4. RF converter PC Board (Fig. 11)

1) Remove the top cover (Item 1-2).
2) Remove the bottom cover (Item 1-3).
3) Remove the jack PC Board (Item 2-11).
4) Disconnect connector (9) and RF cable (10) at the back.
5) Pull the RF converter in the direction of arrow Ⓐ to remove it while pushing 3 stoppers (8-1) at the bottom and the stopper (8-2) at the top.

2-5. Rectifier PC Board (Fig. 11)

1) Remove the top cover (Item 1-2).
2) Lift the PC Board in the direction of arrow (11).

2-6. Tuner/IF pack PC Board (Fig. 11)

1) Remove the top cover (Item 1-2).
2) Remove 2 connectors (12).
3) Remove 3 screws (13).

* Assemble the tuner/IF pack PC Board by the reverse procedure to disassembly.

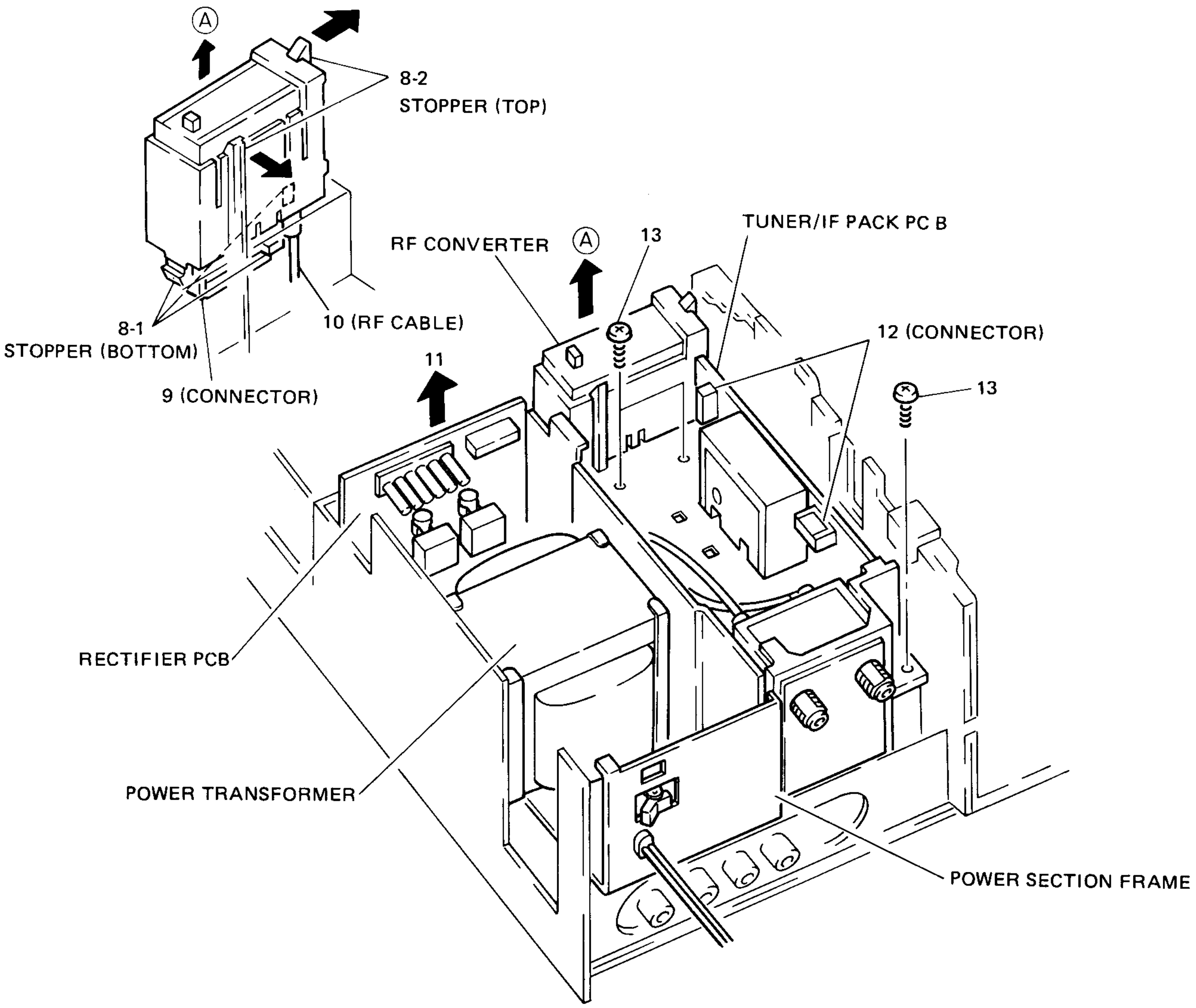

Ⓐ
8-2
STOPPER (TOP)
RF CONVERTER Ⓐ
13
TUNER/IF PACK PC B
8-1
STOPPER (BOTTOM)
10 (RF CABLE)
12 (CONNECTOR)
11
13
9 (CONNECTOR)
RECTIFIER PCB
POWER TRANSFORMER
POWER SECTION FRAME

Fig. 11

2-7. Regulator/servo PC Board (Fig. 12)

1) Remove the top cover (Item 1-2).
2) Remove screw (14) and 9 connectors and lift the PC Board in the direction of the arrow.

* Assemble the regulator/servo PC Board in the reverse procedure to disassembly.

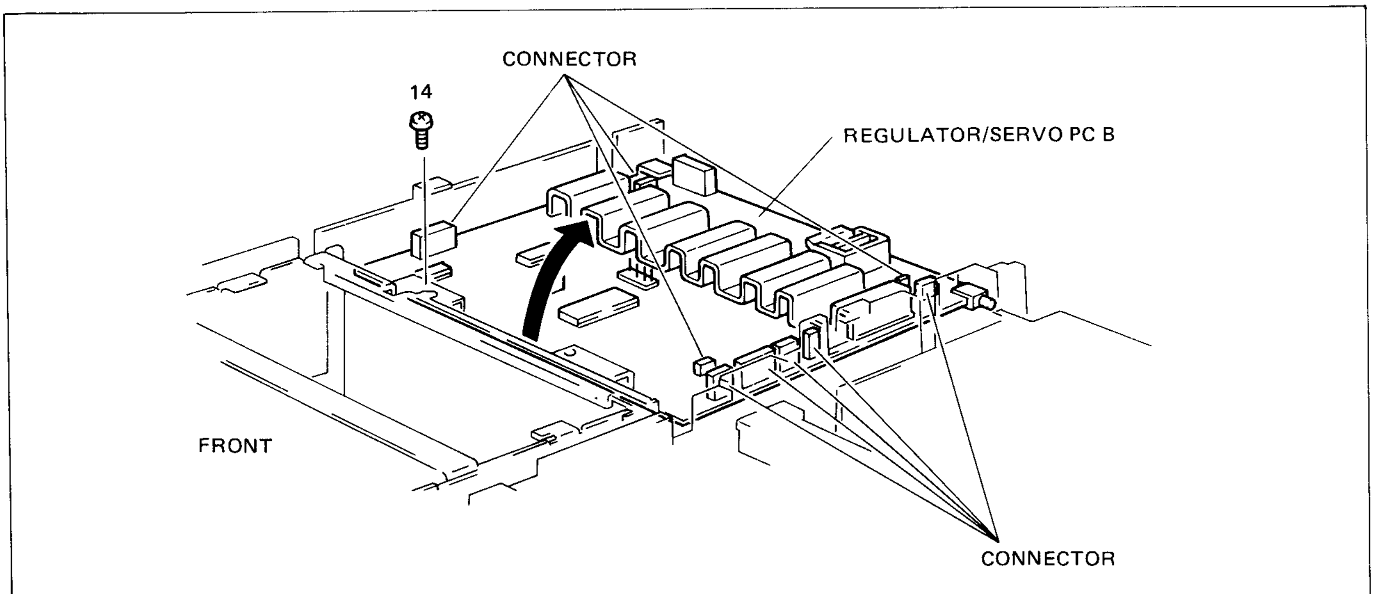

CONNECTOR
14
REGULATOR/SERVO PC B
FRONT
CONNECTOR

Fig. 12

2-8. Y/chroma PC Board (Fig. 13)

1) Remove the top cover (Item 1-2).
2) Remove the regulator/servo PC Board (Item 2-7).
3) Release 2 stoppers (15) while pushing them in the direction of the arrow, pull the PC Board in the direction of the arrow to open it.

Assemble the Y/chroma/PC Board by the reverse procedure to disassembly.

2-9. WHD PC Board

1) Remove the Y-chroma/PC Board (Item 2-8).
2) Release the stopper to open the PC Board.

* This board is located at the back of the Y/chroma board.

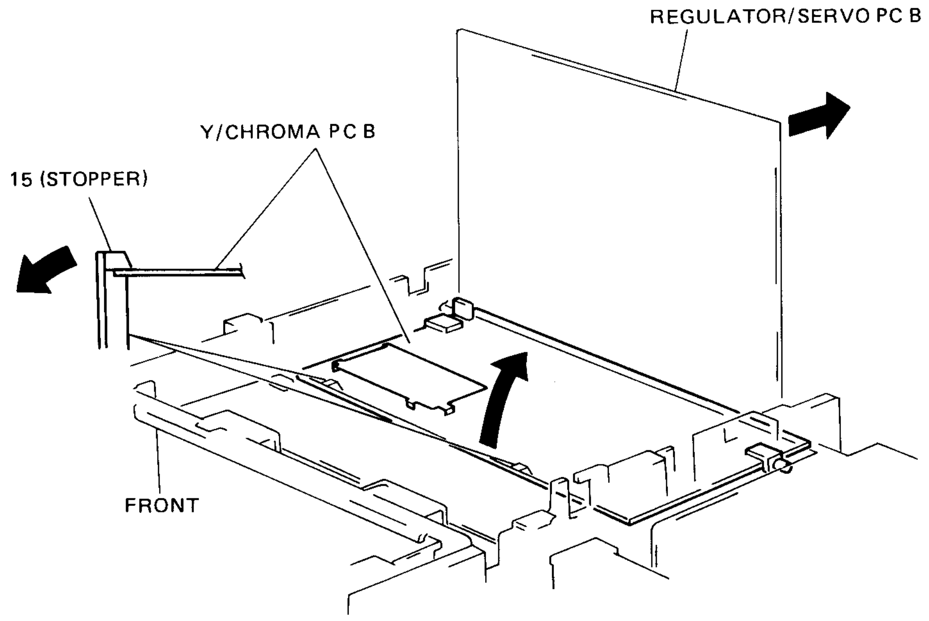

REGULATOR/SERVO PC B
Y/CHROMA PC B
15 (STOPPER)
FRONT

Fig. 13

2-10. Audio PC Board (Fig. 14)

1) Remove the top cover (Item 1-2).
2) Remove screw (16).
3) Pull up the PC Board holder together with the PC Board in the direction of the arrow to remove it.

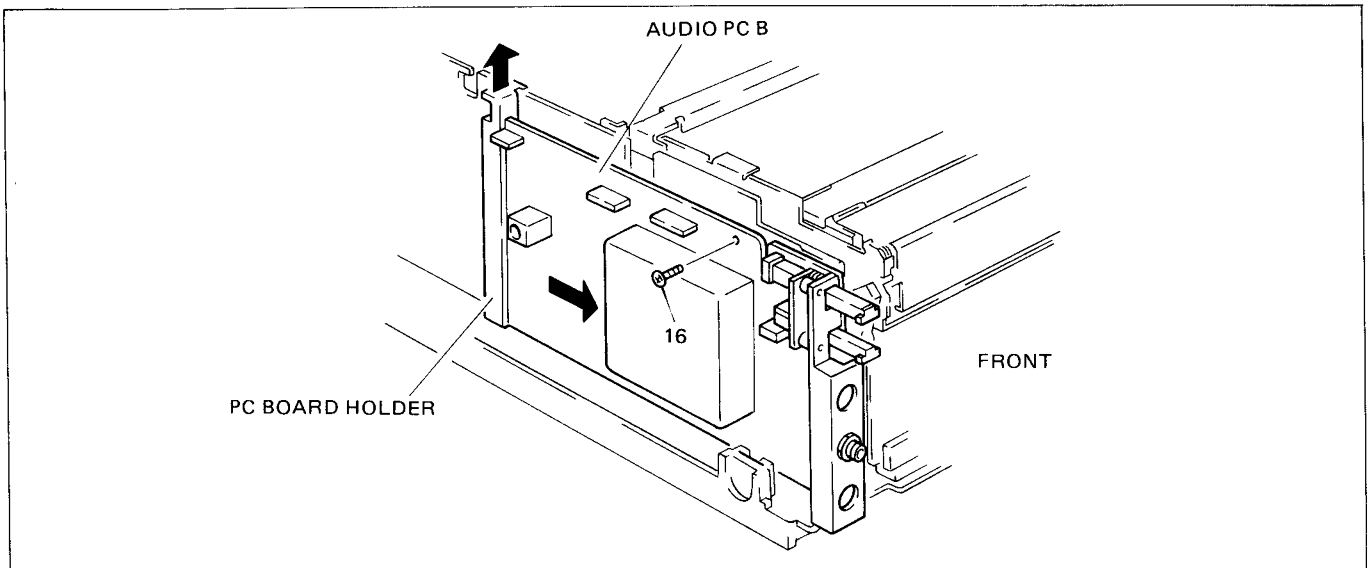

AUDIO PC B
16
FRONT
PC BOARD HOLDER

Fig. 14

2-11. Jack PC Board (Fig. 15)

1) Remove the bottom cover (Item 1-3).
2) Remove 3 screws (17), pull up the PC Board in the direction of the arrow to remove it.

* Assemble the jack PC Board in the reverse procedure to disassembly.

2-12. System control PC Board (Fig. 15)

1) Remove the bottom cover (Item 1-3).
2) Disconnect 3 connectors (18).
3) Remove 2 screws (19), pull up the PC Board in the direction of the arrow to remove it.

* Assemble the system control PC Board in the reverse procedure to disassembly.

2-13. BAC PC Board (Fig. 15)

1) Remove the bottom cover (Item 1-3).
2) Remove the jack PC Board (Item 2-11).
3) Remove 2 screws (20) and 3 stoppers to pull up the PC Board.

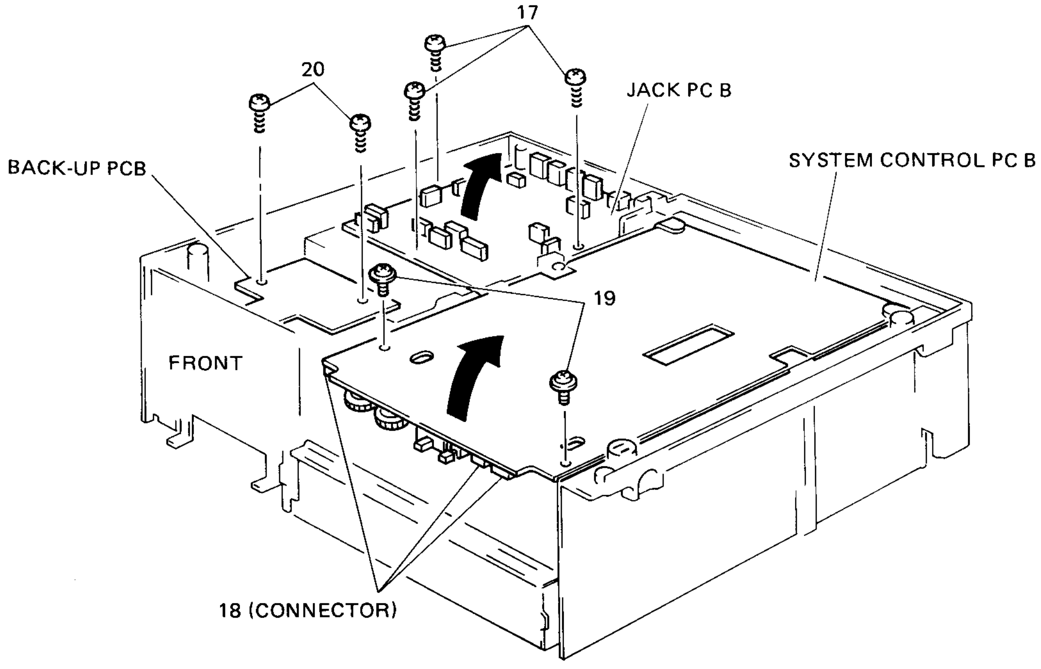

17
20
JACK PC B
BACK-UP PCB
SYSTEM CONTROL PC B
19
FRONT
18 (CONNECTOR)

Fig. 15

CHASSIS BLOCK

SERVICING JIGS AND TOOLS

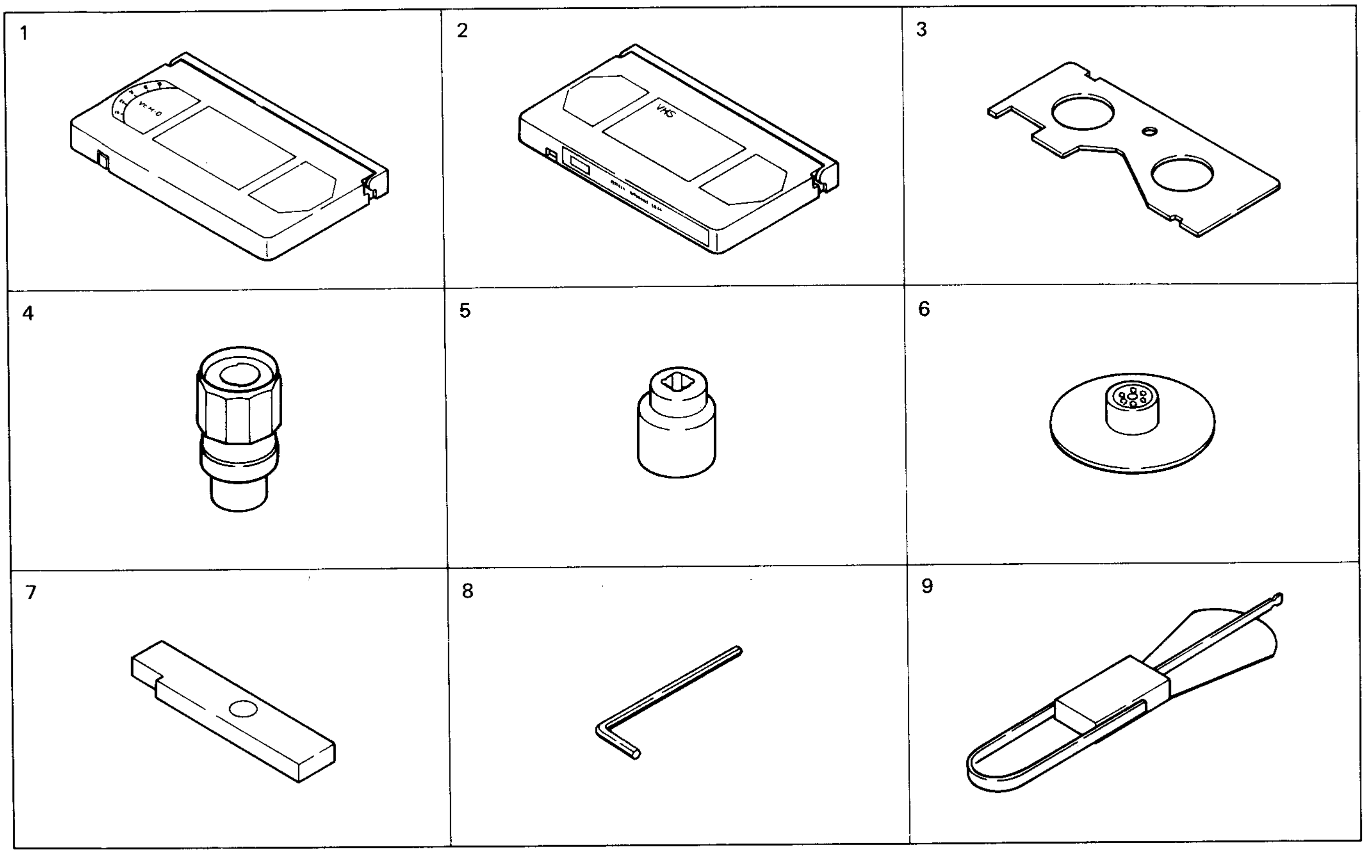


Fig. 16

ITEM	PARTS NAME	PARTS NO.
1	Back tension meter	7099004
2	Alignment tape (NTSC)	7099046
	(PAL)	7099052
	(SECAM)	7099053
3	Height reference plate (Master plane)	7099041
4	Torque gauge	7099039
5	Torque gauge adaptor	7099035
6	Dummy reel	7099043
7	Reel disk height jig	7099001
8	1.5 mm hexagonal wrench	———
9	Fan type tension gauge	———

3. NAMES AND LOCATIONS OF MAIN CHASSIS PARTS

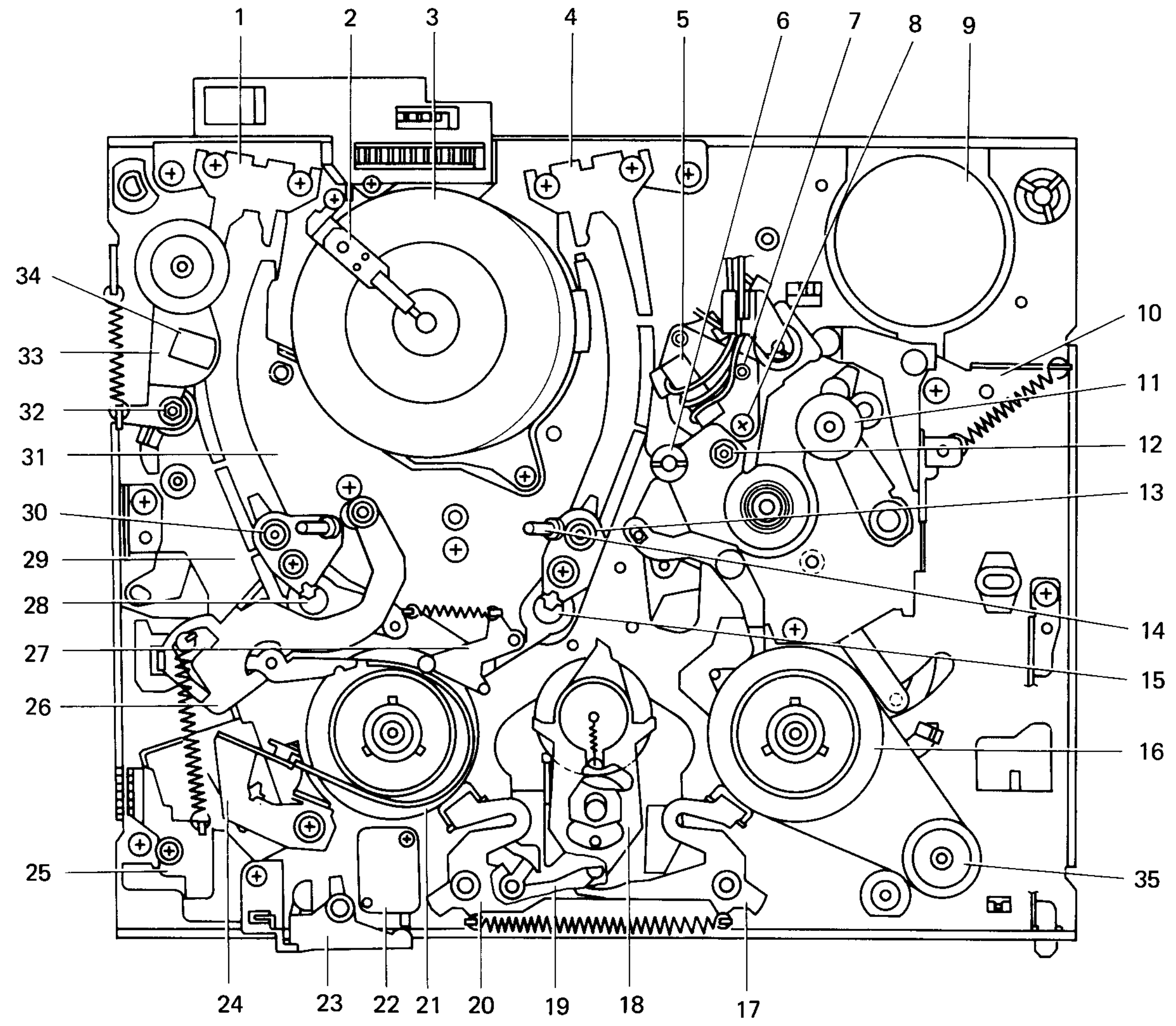


Fig. 17 (Top)

1. Catcher (Supply)
2. Cylinder motor brush
3. Video head (Upper cylinder)
4. Catcher (Take-up)
5. AC head (Audio control head)
6. X value adjusting screw
7. Tilt adjusting screw
8. Azimuth adjusting screw
9. Capstan motor ass'y
10. Arm braket ass'y
11. Pressure roller ass'y
12. Guide pole (Tape guide)
13. Guide roller (Take-up)
14. Inclined guide (Take-up)
15. Guide roller base (Take-up)
16. Take-up reel disk
17. Main brake (Take-up)
18. FF/REW idler arm ass'y
19. Brake conversion arm
20. Main brake (Supply)
21. Supply reel disk
22. Safety tab switch
23. Record prevention arm
24. Tension band ass'y (Tension band, tension bracket)
25. Spring holder (Spring hanger)
26. Tension arm
27. Sub-brake

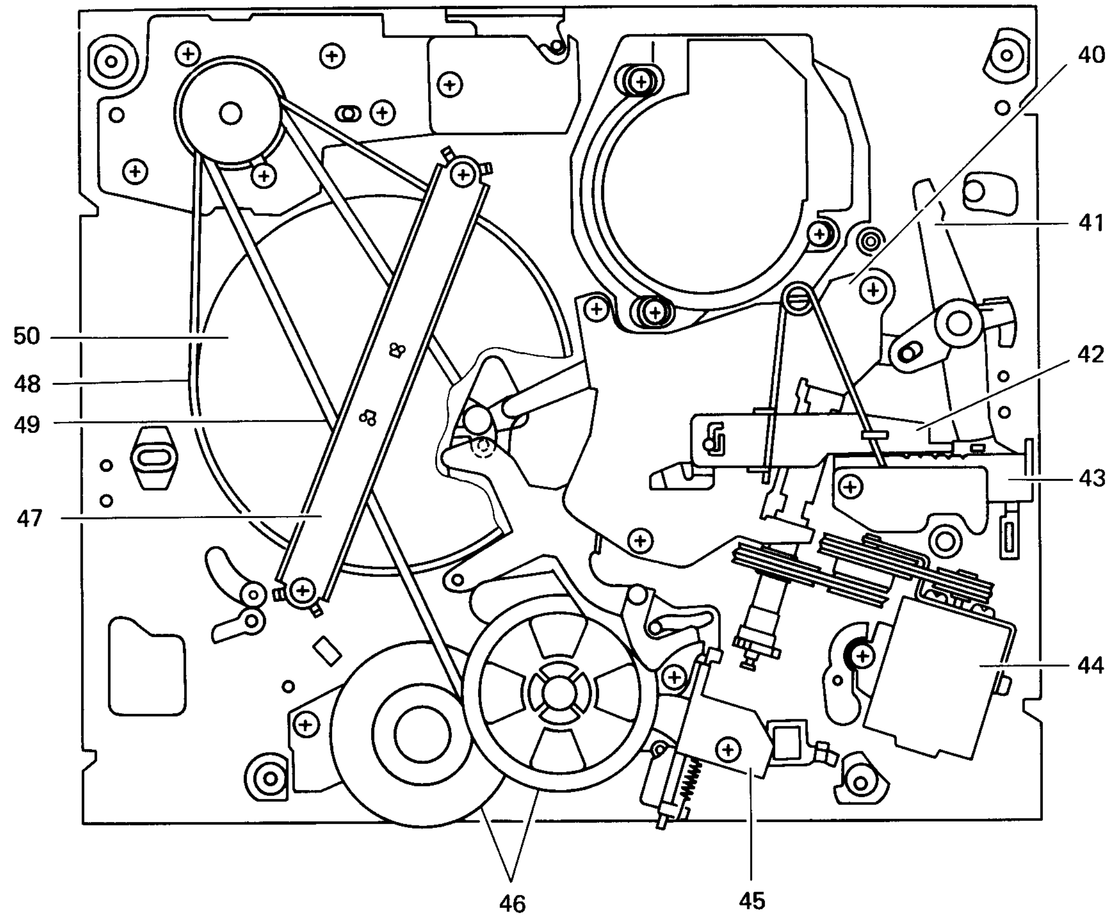


Fig. 18 (Bottom)

28. Guide roller base (Supply)
29. Inclined guide (Supply)
30. Guide roller (Supply side)
31. Guide base clamp plate
32. Guide pole (Supply side)
33. Impedance roller arm ass'y
34. FE head (Full erase head)
35. FF/REW pulley

40. Loading gear ass'y
41. Tension release arm 2
42. Mode slider
43. Mechanism state switch
44. Loading motor ass'y
45. Brake slider ass'y
46. Clutch plate ass'y
47. Flywheel support plate
48. Reel belt
49. Flywheel belt
50. Flywheel ass'y

4. BEFORE DISASSEMBLING PARTS

The parts shown below are fixed in the factory using precision jigs so be sure not to loosen their screws or remove them.

1) Take-up/supply catchers and fixing screws.
2) Inclined guide and its fixisng screws.
   Do not turn the adjusting screws shown below when removing adjacent parts.
3) Take-up/supply guide pole height adjusting nuts.
4) Take-up/supply guide roller height adjusting screws.
5) AC head X value adjusting screw.
6) AC head tilt adjusting screw.
7) AC head azimuth adjusting screw.
8) AC head height adjusting nut.
9) Back tension adjusting spring holder fixing screw.
10) Tension band fixing screw.

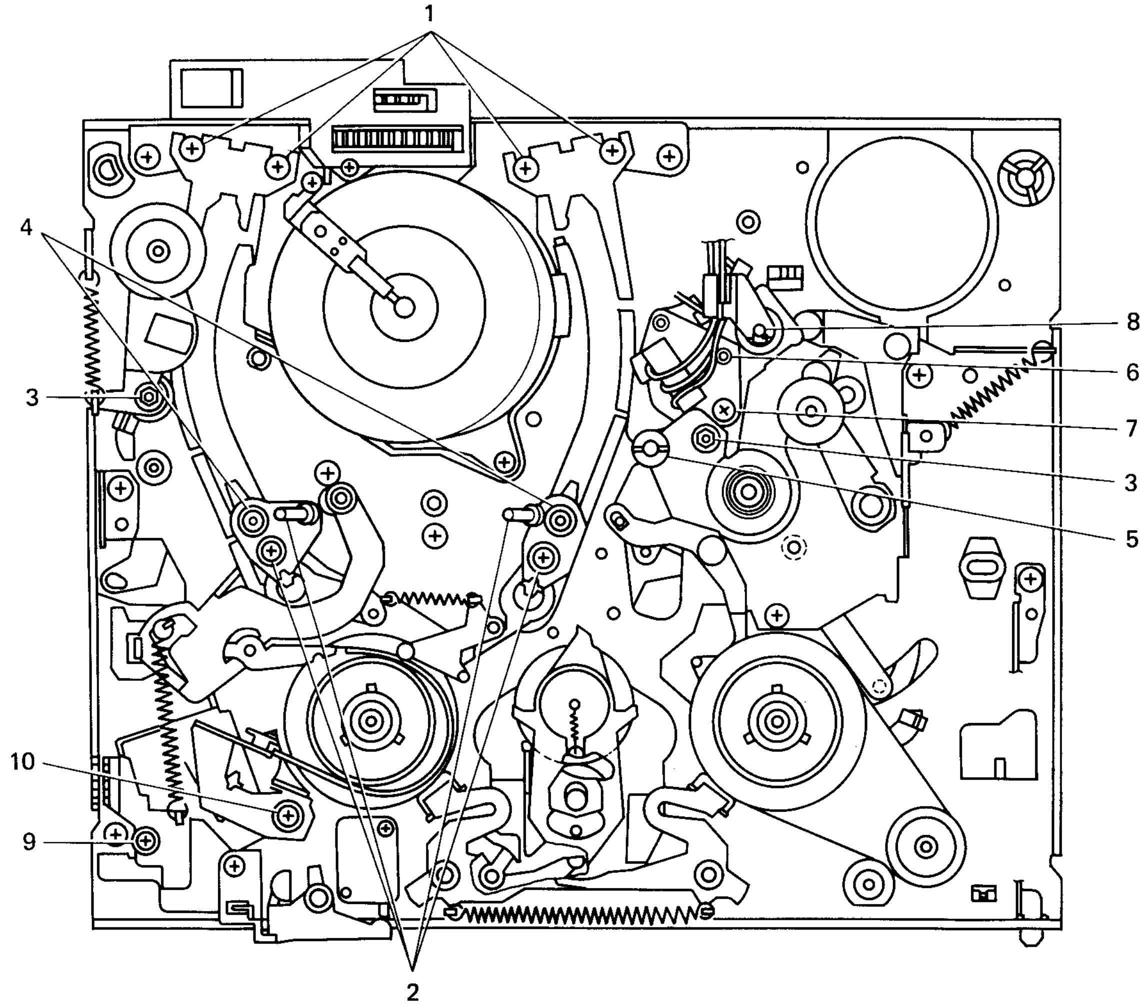


Fig. 19

5. REMOVING CHASSIS PC BOARDS

5-1. End sensor PC Board (Fig. 20)

1) Remove the front loading mechanism (Item 6-1).
2) Remove screw (1) (1 each).

5-2. Front loading motor (Fig. 20)

1) Remove the front loading mechanism (Item 6-1).
2) Remove 3 screws (2).

5-3. Cassette loading switch PC Board (Fig. 20)

1) Remove the front loading mechanism (Item 6-1).
2) Remove screw (3).

5-4. Front unloading switch PC Board (Fig. 20)

1) Remove the front loading mechanism (Item 6-1).
2) Remove screw (4).

5-5. Front loading switch PC Board (Fig. 20)

1) Remove the front loading mechanism (Item 6-1).
2) Remove screw (5).

5-6. Connector PC Board (Fig. 20)

1) Remove the front loading mechanism (Item 6-1).
2) Remove 2 nylon rivets (6).

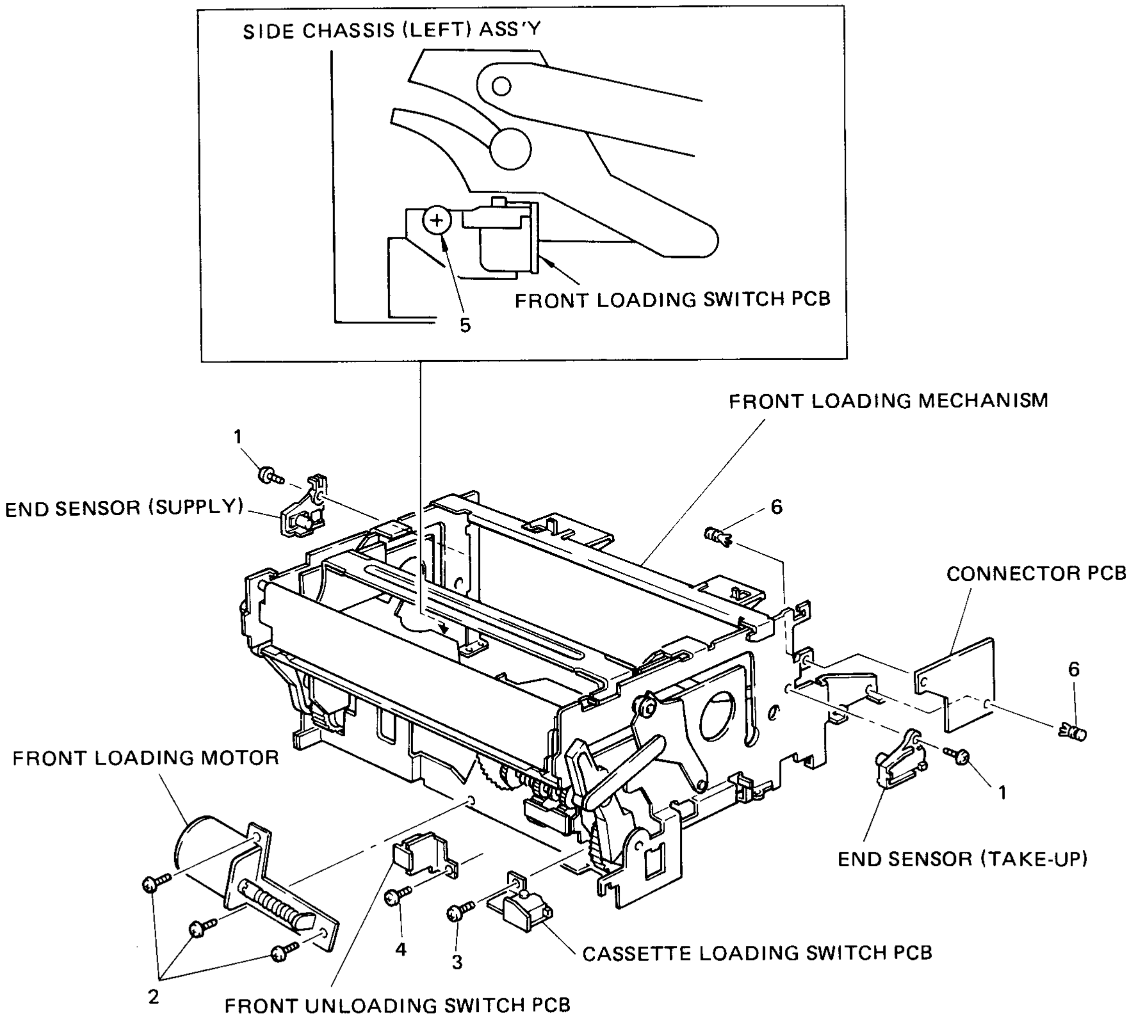

SIDE CHASSIS (LEFT) ASS'Y
FRONT LOADING SWITCH PCB
5
FRONT LOADING MECHANISM
1
END SENSOR (SUPPLY)
6
CONNECTOR PCB
6
FRONT LOADING MOTOR
1
END SENSOR (TAKE-UP)
4
3
CASSETTE LOADING SWITCH PCB
2
FRONT UNLOADING SWITCH PCB

Fig. 20

5-7. Safety tab switch PC Board (Fig. 21)

1) Remove the front loading mechanism (Item 6-1).
2) Remove screw (7).
3) Disconnect connector (8).

5-8. Video head selector PC Board (Fig. 21)

1) Remove the front loading mechanism (Item 6-1).
2) Disconnect 2 connectors (9).
3) Pull out the PC Board in the direction of the arrow Ⓑ while pushing the stopper in the direction of arrow Ⓐ.

5-9. End lamp PC Board (Fig. 21)

1) Remove the front loading mechanism (Item 6-1).
2) Remove screw (10).

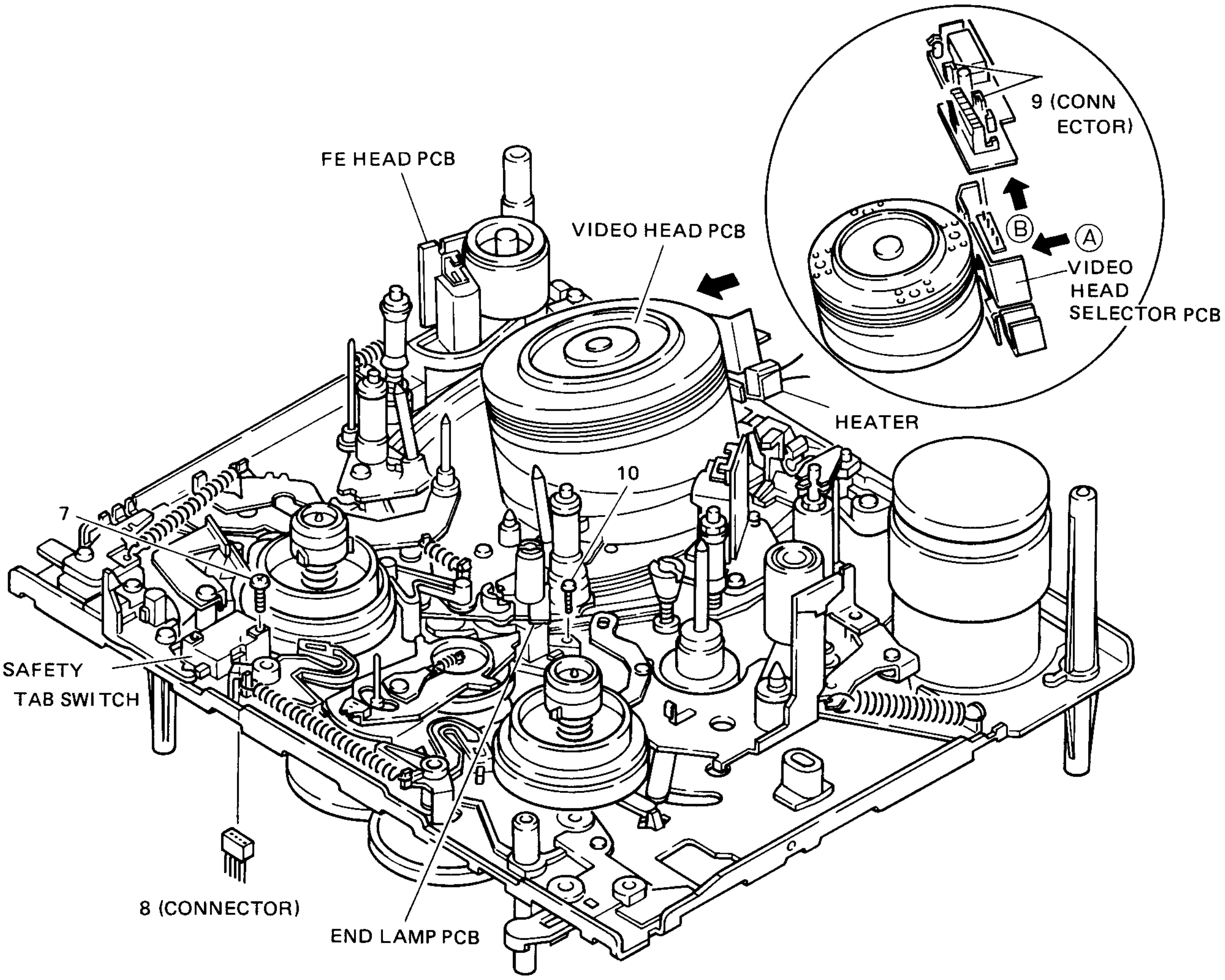

9 (CONN ECTOR)
FE HEAD PCB
VIDEO HEAD PCB
Ⓑ
Ⓐ
VIDEO HEAD SELECTOR PCB
HEATER
10
7
SAFETY TAB SWITCH
8 (CONNECTOR)
END LAMP PCB

Fig. 21

5-10. Supply/take-up reel sensor PC Board (Fig. 22)

1) Remove screw (11).

5-11. Cassette holder switch (Fig. 22)

1) Remove screw (12).
2) Disconnect connector (13).

5-12. Mechanism state switch (Fig. 22)

1) Remove switch (14).

* Adjust the mechanism state switch installation position (Item 8-2) after installing it.

5-13. Capstan motor PC Board (Fig. 22)

1) Remove screw (15).

5-14. Cylinder motor PC Board (Fig. 22)

1) Remove 2 screws (16).

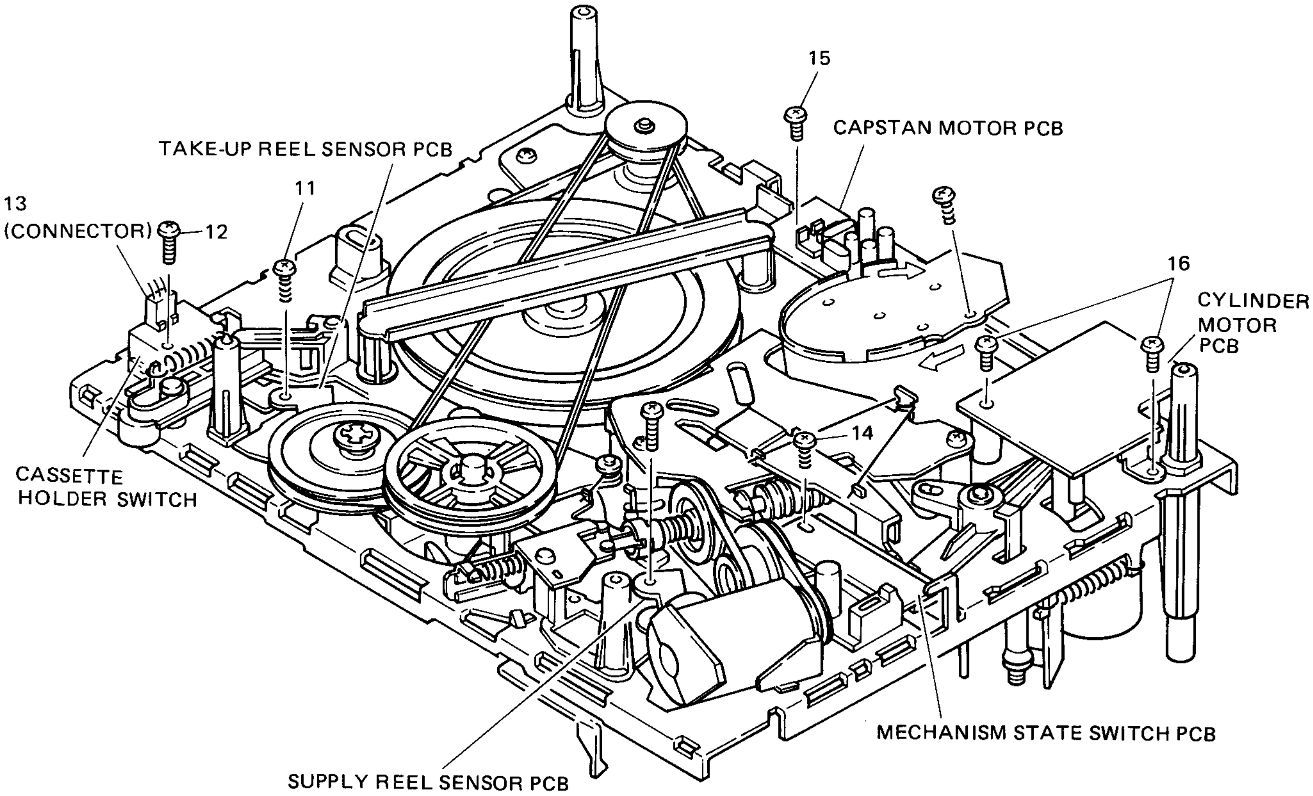

15
CAPSTAN MOTOR PCB
TAKE-UP REEL SENSOR PCB
11
13
(CONNECTOR)
12
16
CYLINDER MOTOR PCB
14
CASSETTE HOLDER SWITCH
MECHANISM STATE SWITCH PCB
SUPPLY REEL SENSOR PCB

Fig. 22

6. REMOVING MAIN CHASSIS PARTS

6-1. Front loading mechanism (Fig. 23-1, Fig. 23-2)

The servicing parts concerning the front loading mechanism are roughly classified as follows.

1. Front loading mechanism ass'y
2. Front chassis ass'y
3. Side chassis ass'y
4. Cassette door ass'y
5. Cassette holder ass'y

The replacement procedures are described in the following for individual parts.

1. Front loading mechanism ass'y

1) Remove 2 front loading mechanism fixing screws (1).
2) Disconnect connector (2).
3) First lift the cylinder of the front loading mechanism to remove it.

* Assemble the front loading mechanism in the reverse procedure to disassembly.

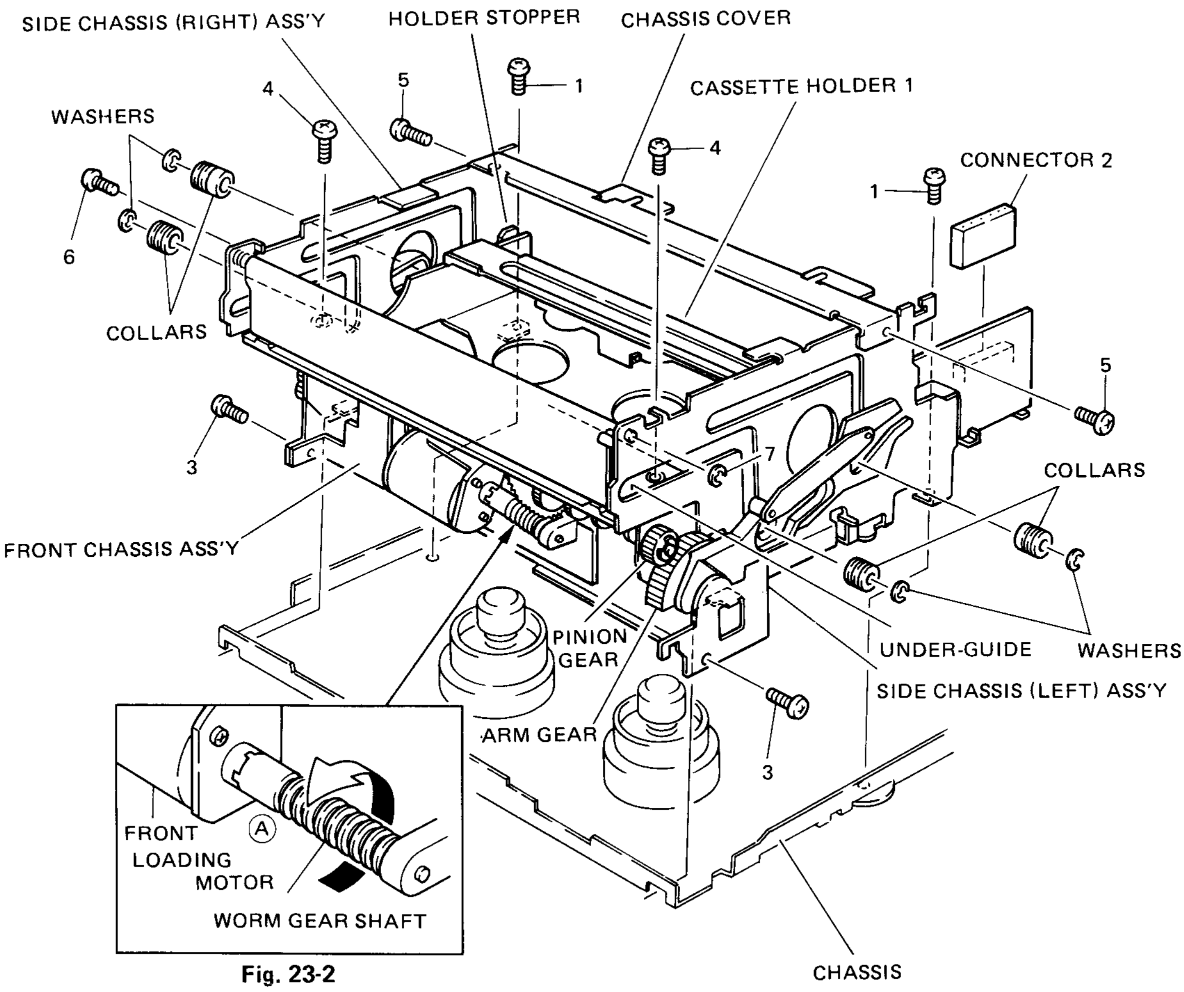

SIDE CHASSIS (RIGHT) ASS'Y
HOLDER STOPPER
CHASSIS COVER
CASSETTE HOLDER 1
WASHERS
CONNECTOR 2
4
5
1
4
1
6
COLLARS
5
COLLARS
3
7
FRONT CHASSIS ASS'Y
PINION GEAR
UNDER-GUIDE
WASHERS
SIDE CHASSIS (LEFT) ASS'Y
ARM GEAR
3
FRONT LOADING MOTOR
Ⓐ
WORM GEAR SHAFT
CHASSIS

Fig. 23-2

Fig. 23-1

2. Front chassis ass'y

1) Remove the front loading mechanism ass'y from the chassis (Item 1).
2) Turn the worm gear shaft shown in Fig. 23-2 in the direction of arrow Ⓐ to lower the cassette holder (depress the left/right stoppers) and set it to the loading completion position.
3) Remove the under-guide (1 stopper).
4) Remove 2 screws (3) and 2 screws (4) shown in Fig. 23-1 and then remove the front chassis ass'y.

* Assemble the front chassis ass'y in the reverse procedure to disassembly; check the engagement between the arm gears on both sides and the pinion gear (refer to "Inspection and adjustment of front loading mechanism") and spacing between the left/right sides using the door shaft.

3. Side chassis right (left) ass'y

1) Remove the front loading mechanism ass'y from the chassis (Item 1).
2) Remove 2 chassis cover (right and left) fixing screws (5).
3) Remove cassette door bracket fixing screw (6) and washer (7) to remove the cassette door.
4) Remove the front chassis ass'y. (Remove 2 fixing screws (each for right and left)).
5) Remove 2 washers (each for right and left) and 2 collars (each for right and left) to remove the side chassis ass'y from the front chassis ass'y and cassette holder ass'y.

* Assemble the front chassis ass'y in the reverse procedure to disassembly; check the engagement between the arm gears on both sides and the pinion gear (refer to "Inspection and adjustment of front loading mechanism") and spacing between the left/right sides using the door shaft.

4. Cassette holder ass'y

1) Remove the front loading mechanism from the chassis (Item 1).
2) Remove the front chassis ass'y (Item 2).
3) Remove the left/right side chassis ass'y (Item 3).
4) Remove the cassette holder from the front chassis ass'y and side chassis ass'y.

* Assemble the cassette holder in the reverse procedure to disassembly. Check the engagement of front loading gears before assembly. (Refer to "Inspection and adjustment of the front loading mechanism".)

6-2. Cylinder motor (Fig. 24-1, Fig. 24-2, Fig. 24-3)

The service parts of the cylinder motor are as follows.

1. Video head (Upper cylinder)
2. Fixed (lower) cylinder ass'y
3. Transformer terminals
4. Stator circuit board ass'y
5. Rotor magnet ass'y
6. FG circuit ass'y

The replacement procedure for each part is described in the following.

1. Video head (Upper cylinder) (Fig. 24-1, Fig. 24-2)

1) Remove the regulator/servo PC Board.
2) Remove 2 chassis cover fixing screws (Fig. 23-1).
3) Remove the shield cover.
4) Remove the brush fixing screw (4).
5) Remove 8 video head leads (5-1) shown in Fig. 24-2.
6) Remove 2 video head fixing screws (6) to pull out the video head.

* Assemble the video head in the reverse procedure to disassembly. Check the following after assembly.

① Tighten 2 video head fixing screws (6) shown in Fig. 24-1 alternately. Be careful not to touch the video head tip with a finger or tool.
② Check that the leads of the rotary transformer shwon in Fig. 24-2 and the lead colors marked on the relay PC Board match when soldering the leads after replacing the video head.
③ Clean the tape touching section of the cylinder using alcohol, etc. after installing the video head.
④ Check the output of the FM signal. (Refer to the item "Transport system adjustment" in "Mechanism adjustment").
⑤ Check the record level of the Y/chroma signals. (Refer to the item "Record current adjustment" in "Circuit adjustment").
⑥ Check the switching point of the video head. (Refer to the item "Switching point (CH1, CH2 PHASE) adjustment" in "Circuit adjustment").
⑦ Check that the FM signal is max. with the tracking VR set to the center (click) position. (Refer to the item "Tracking preset adjustment" in "Circuit adjustment").

2. Fixed cylinder (lower cylinder) (Fig. 24-1)

1) Remove the cylinder motor circuit board (Refer to Item 5-14).
2) Disconnect 3 connectors (7).
3) Disconnect 2 connectors (8).
4) Remove 3 lower cylinder fixing screws (9), and then remove the fixed cylinder (lower cylinder) from the top of the chassis.
5) Remove the video head (upper cylinder).

* Install the fixed cylinder (lower cylinder) by the procedure reverse to disassembly. When the video head (upper cylinder) is removed, electrically check and adjust it according to the procedure described previously in the item "Video head installation method".

3. **Transformer terminals (Fig. 24-1, Fig. 24-2)**

Transformer terminals play the role of the guides which lead the leads of the rotary transformer to the video head (upper cylinder). When the leads are cut and shortened and soldering them to the relay circuit board is not possible, replace the transformer terminals.

1) Remove the video head. (Refer to item (1)).
2) Unsolder the leads (5-2) soldered to the relay circuit board for the fixed head.
3) Pull out the transformer terminals.

* Install the transformer terminals by the procedure reverse to disassembly. Check that the lead colors and color names stamped on the relay circuit board on the rotary transformer match at that time (Refer to Fig. 24-2).

4. **Rotarymagnet ass'y (Fig. 24-3)**

Do not allow the rotary magnet to be attracted by other magnetic or iron materials because it is magnetized with high precision to maintain the precise rotation of the motor. When it is attracted by mistake, there is danger that its magnetization may be changed. Pay special attention in handling the FG signal generating magnet installed to the back of the rotary magnet because the number of poles is 60 and magnetizing force is weak.

1) Remove stator circuit board fixing screw (10).
2) Turn the stator circuit board clockwise to remove the stator ass'y.
3) Remove motor case fixing screw (11).
4) Turn the motor case clockwise to remove it.
5) Remove 2 rotor magnet fixing screws (12) shown in Fig. 24-3.
6) Remove the rotor magnet. Be careful not to apply unreasonable force to the cylinder shaft at that time.

* Install the rotor magnet by the procedure reverse to disassembly. Check items shown below at that time.

① The installation position regulating convex section is provided near the hole in the rotor magnet into which the shaft is inserted, to adjust the installation position. Install the rotor magnet so that this convex section enters the concave section provided in the shaft.

② Check the switching point of the video head after installing the rotor magnet.
(Refer to the item "CH1/CH2 phase adjustment" in "Circuit adjustment").

5. **FG PC Board ass'y (Fig. 24-1)**

1) Remove the stator PC Board.
2) Remove the rotor magnet (Item 4).
3) Remove motor case fixing screw (11).
4) Turn the motor case clockwise to remove it.
5) Remove 3 FG PC Board fixing screws (13).

* Install the FG PC Board ass'y by the procedure reverse to disassembly. Refer to the item "Rotor Magnet" also for the installation procedure of the FG PC Board and electrical adjustment and checking after installation.

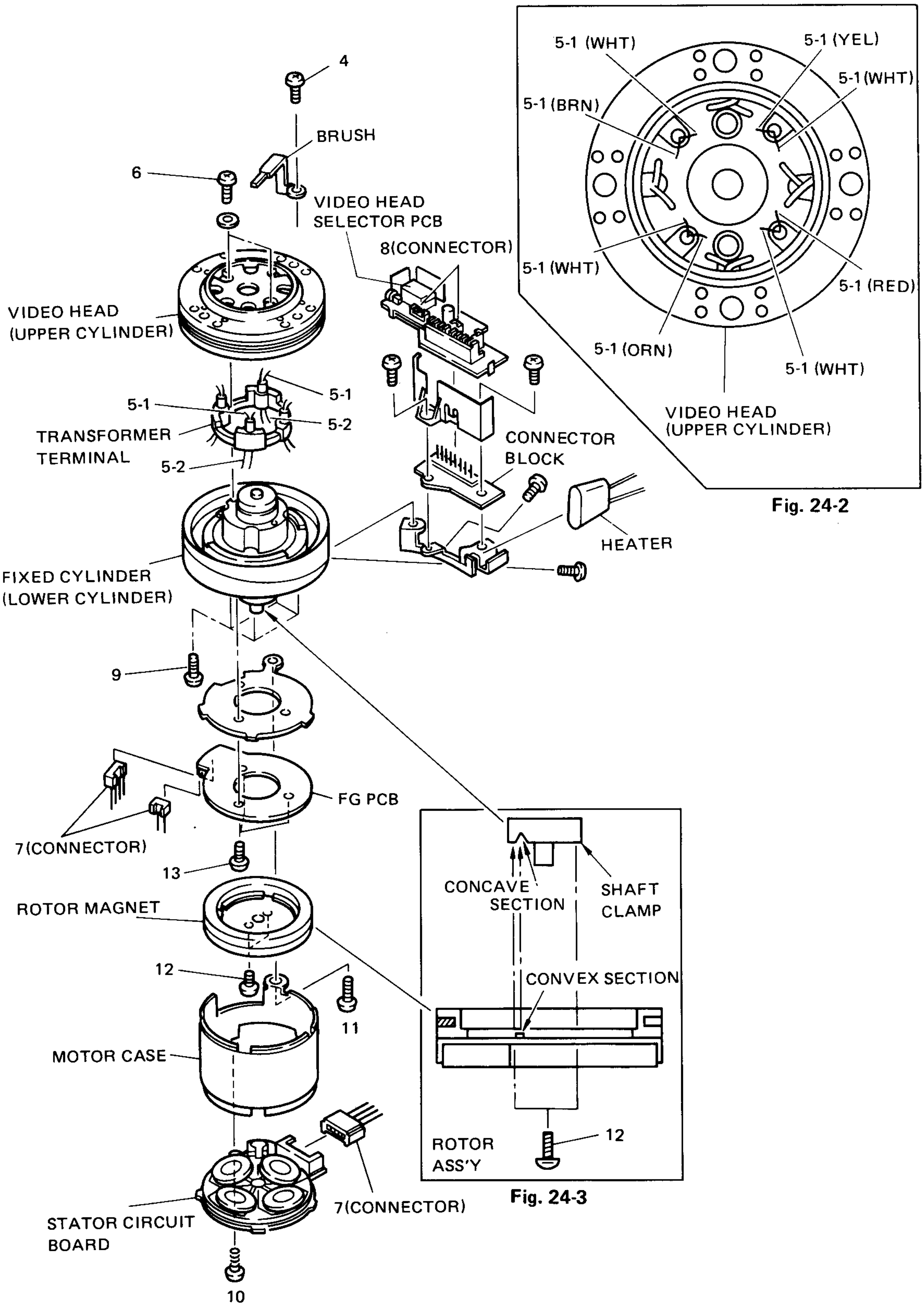

4
BRUSH
6
VIDEO HEAD SELECTOR PCB
8(CONNECTOR)
VIDEO HEAD (UPPER CYLINDER)
5-1
5-1
5-2
TRANSFORMER TERMINAL
5-2
CONNECTOR BLOCK
HEATER
FIXED CYLINDER (LOWER CYLINDER)
9
FG PCB
7(CONNECTOR)
13
ROTOR MAGNET
12
11
MOTOR CASE
STATOR CIRCUIT BOARD
7(CONNECTOR)
10
5-1 (WHT)
5-1 (YEL)
5-1 (WHT)
5-1 (BRN)
5-1 (WHT)
5-1 (RED)
5-1 (ORN)
5-1 (WHT)
VIDEO HEAD (UPPER CYLINDER)
CONCAVE SECTION
SHAFT CLAMP
CONVEX SECTION
12
ROTOR ASS'Y

Fig. 24-2

Fig. 24-3

Fig. 24-1

6-3. Loading motor ass'y (Fig. 25)

1. Remove the loading belt.
2. Disconnect connector (14).
3. Remove bracket fixing screw (15) and remove the loading motor.

* Install the loading motor by the procedure reverse to disassembly.

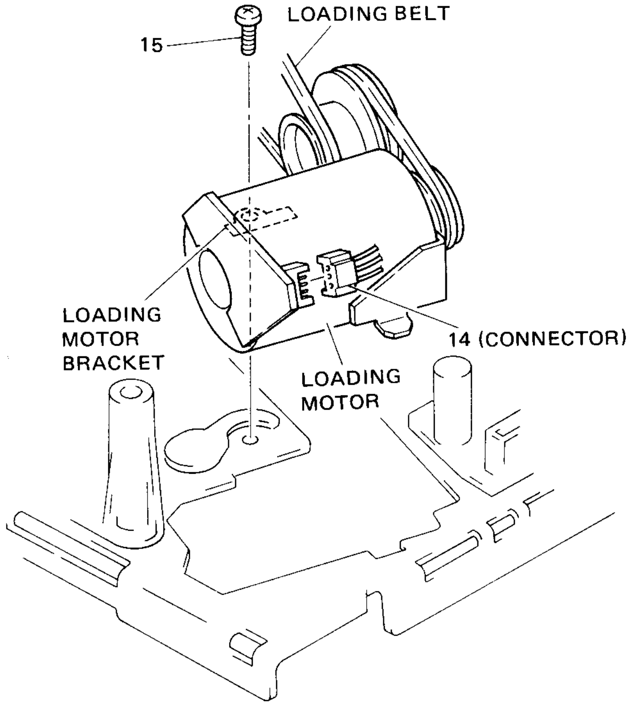

15
LOADING BELT
LOADING MOTOR BRACKET
14 (CONNECTOR)
LOADING MOTOR

Fig. 25

6-4. Capstan motor (Fig. 26)

1. Remove the reel belt.
2. Remove the flywheel belt.
3. Remove 2 capstan motor holder fixing screws (16).
4. Lift the capstan motor ass'y (motor, holder, circuit board) in the direction of the arrow.

* Install the capstan motor by the procedure reverse to disassembly. Check twisting, etc. after installing the reel belt.

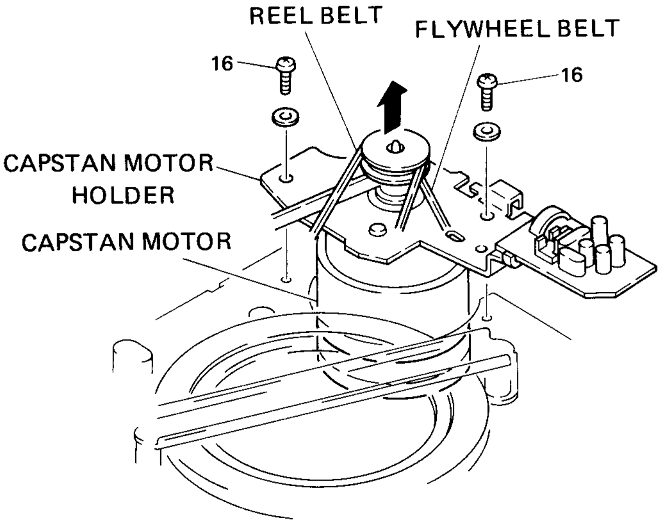

REEL BELT
FLYWHEEL BELT
16
16
CAPSTAN MOTOR HOLDER
CAPSTAN MOTOR

Fig. 26

6-5. Flywheel (Fig. 27)

1. Remove 2 flywheel support plate fixing screws (17) to remove it.
2. Pull out the Flywheel in the direction of the arrow.

* Install the flywheel by the procedure reverse to disassembly.

Insert washer (18) into the capstan shaft from the top of chassis.

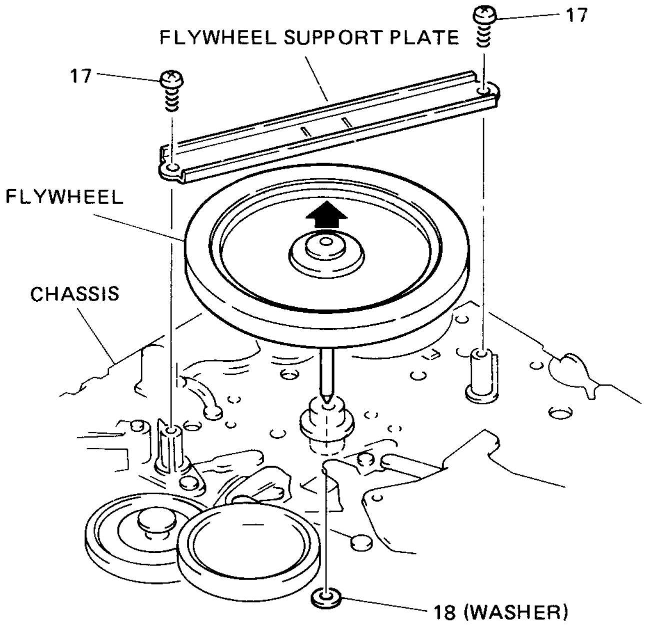

17
FLYWHEEL SUPPORT PLATE
17
FLYWHEEL
CHASSIS
18 (WASHER)

Fig. 27

6-6. FF/REW idler arm ass'y (Fig. 28)

1. Move spring holder (19) in the direction of arrow Ⓐ to remove it.
2. Pull out the FF/REW idler ass'y in the direction of arrow ②.

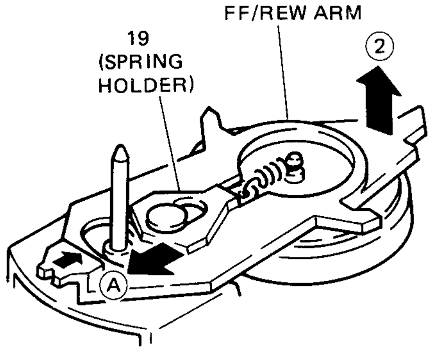

FF/REW ARM
19
(SPRING
HOLDER)
②
Ⓐ

Fig. 28

6-7. Clutch plate ass'y (Fig. 29)

1. Remove the FF/REW idler arm ass'y. (Refer to Item 6-6)
2. Remove 2 clutch plate fixing screws (20).
3. Press the main brake arms (supply side and take-up side) and the brake conversion arm in the direction of arrow Ⓐ to release their engagement and lift the clutch plate ass'y in the direction of arrow Ⓑ to remove it.

* Install the clutch plate ass'y by the procedure reverse to disassembly.

6-8. Brake slider ass'y (Fig. 29)

1. Remove the FF/REW idler arm ass'y. (Refer to Item 6-6)
2. Remove the clutch plate ass'y. (Refer to Item 6-7)
3. Remove brake slider ass'y fixing screw (21) to remove the brake slider ass'y.

* Install the brake slider ass'y by the procedure reverse to disassembly.

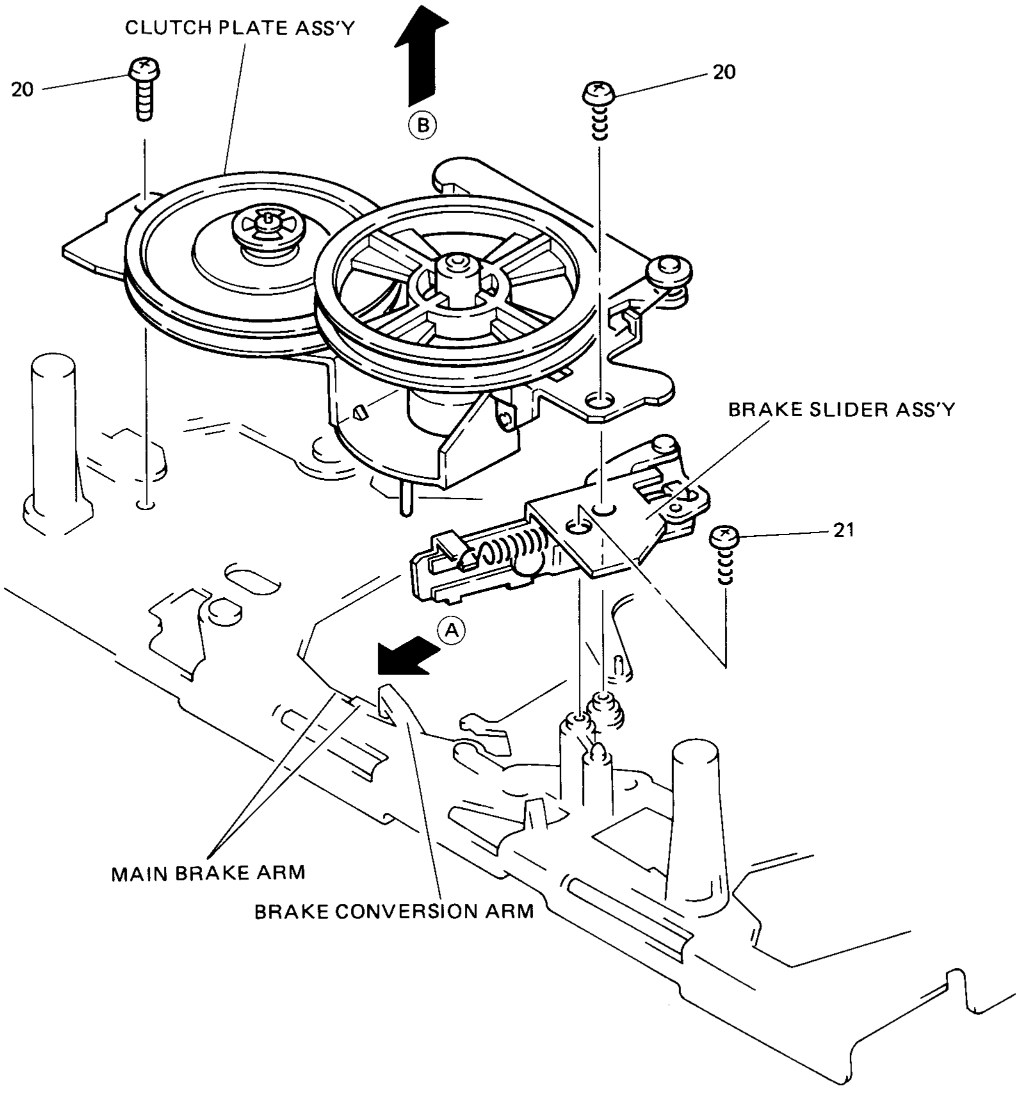

CLUTCH PLATE ASS'Y
20
Ⓑ
20
BRAKE SLIDER ASS'Y
21
Ⓐ
MAIN BRAKE ARM
BRAKE CONVERSION ARM

Fig. 29

6-9. Loading gear ass'y (Fig. 30, Fig. 31)

1. Turn the loading pulley (shown in Fig. 31) fully in the direction of unloading (direction of arrow Ⓐ) by band to set the chassis to the unloading mode.
2. Remove the mechanism state switch. (Refer to Item 5-12)
3. Remove the clutch plate ass'y. (Refer to Item 6-7)
4. Remove the brake slider ass'y. (Refer to Item 6-8)
5. Remove 3 loading gear ass'y fixing screws (22) shown in Fig. 31.
6. Remove 2 guide base clamp plate fixing screws (23) shown in Fig. 30.
7. Remove the T release arm while pressing the stopper shown in Fig. 31 in the direction of arrow Ⓑ.
8. Remove the loading gear ass'y.

* Install the loading gear ass'y by the procedure reverse to disassembly. Install it while paying attention to the items shown below and the linked sections shown in Fig. 31.

1) The loading gear shaft should be inserted into the hole in the loading link.
2) The operation arm shaft should be inserted into the hole in the T brake operation arm.
3) The shaft of the T release arm 1 should be inserted into the hole in the T release arm 2.
4) The shaft of drive arm should be inserted into the hole in the coupling piece.

Check and adjust the installation position of the mechanism state switch after installing it. (Refer to Item 8-2).

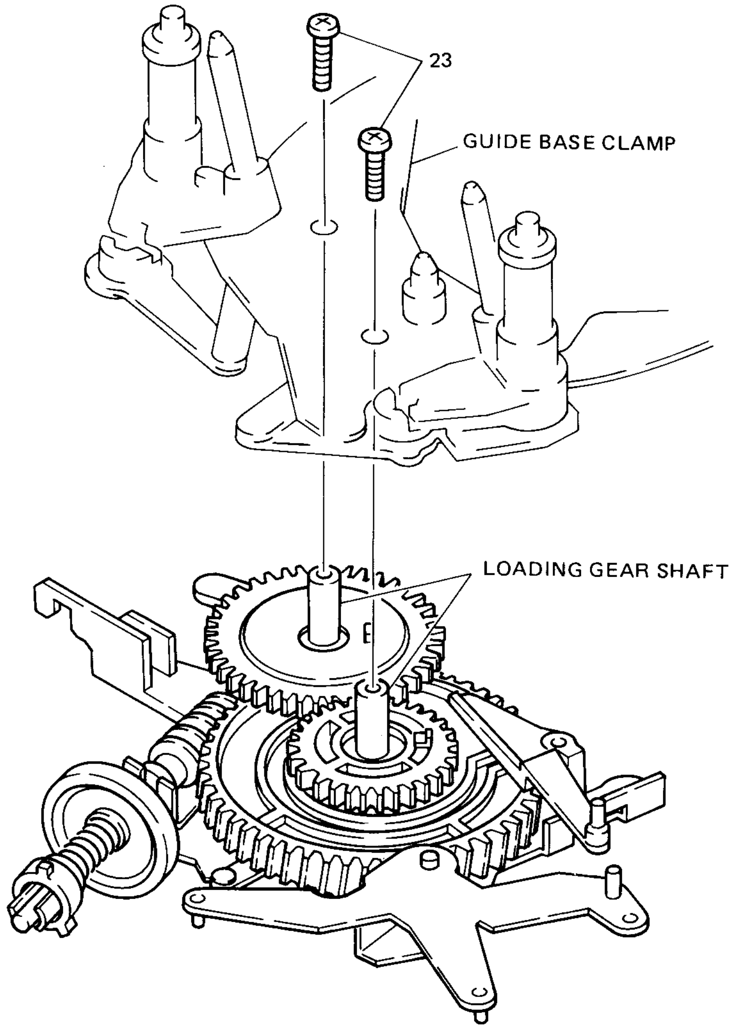


Fig. 30

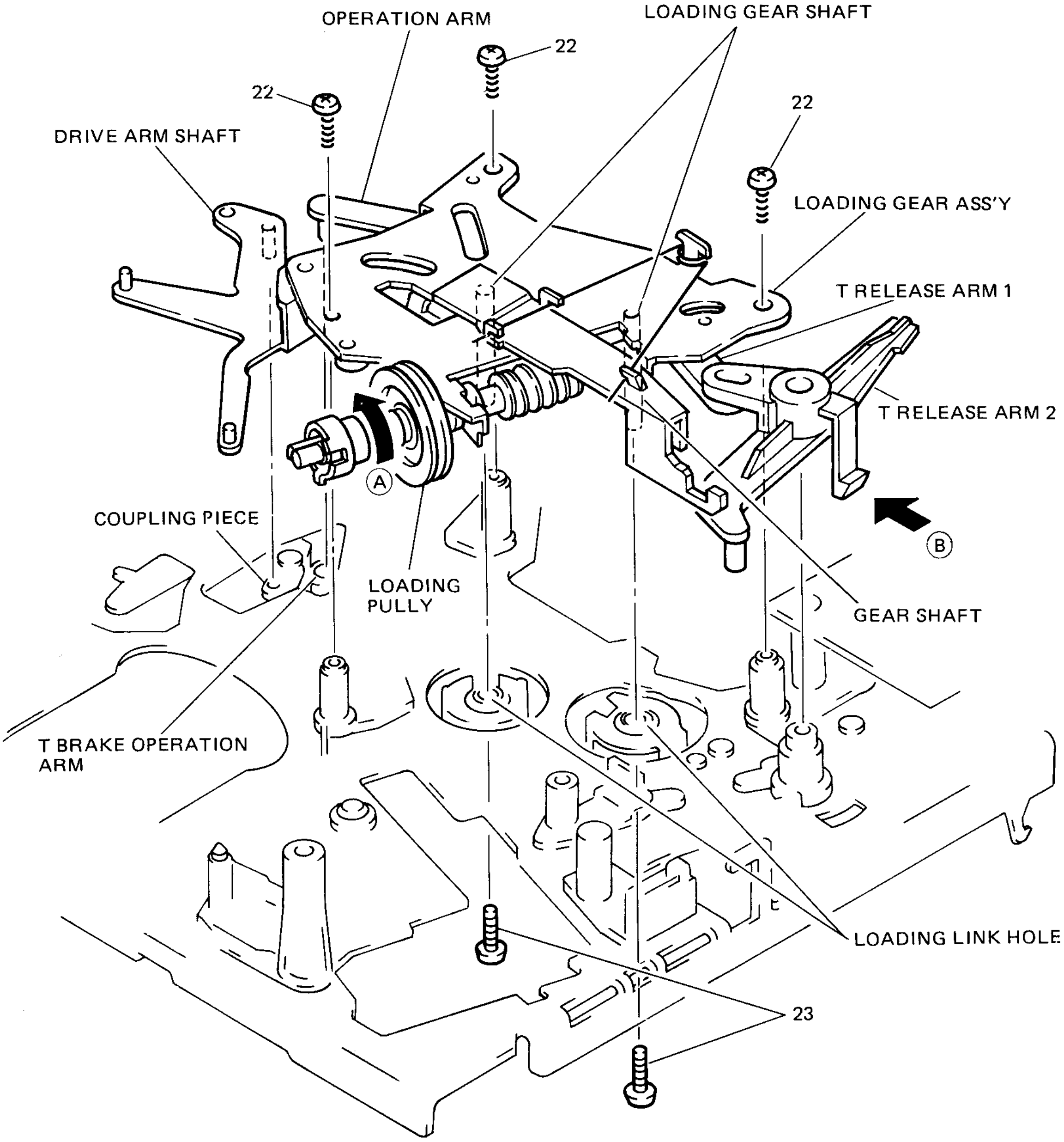

OPERATION ARM
LOADING GEAR SHAFT
22
22
22
DRIVE ARM SHAFT
LOADING GEAR ASS'Y
T RELEASE ARM 1
T RELEASE ARM 2
Ⓐ
Ⓑ
COUPLING PIECE
LOADING PULLY
GEAR SHAFT
T BRAKE OPERATION ARM
LOADING LINK HOLE
23

Fig. 31

6-10. Tension band/tension arm ass'y (Fig. 32)

Tension band

1. Remove the front loading mechanism. (Refer to Item 6-1)
2. Remove tension band fixing screw (24).
3. Press stopper Ⓐ of the tension band felt to release engagement between the tension band and tension felt, and then remove the tension band.

Tension arm

1. Remove the tension band.
2. Remove spring (25).
3. Pull out the tension arm upward while pressing stopper Ⓑ.

* Install the tension band/tension arm ass'y by the procedure reverse to disassembly. Adjust the position of the tension pole and tension after installation is completed.

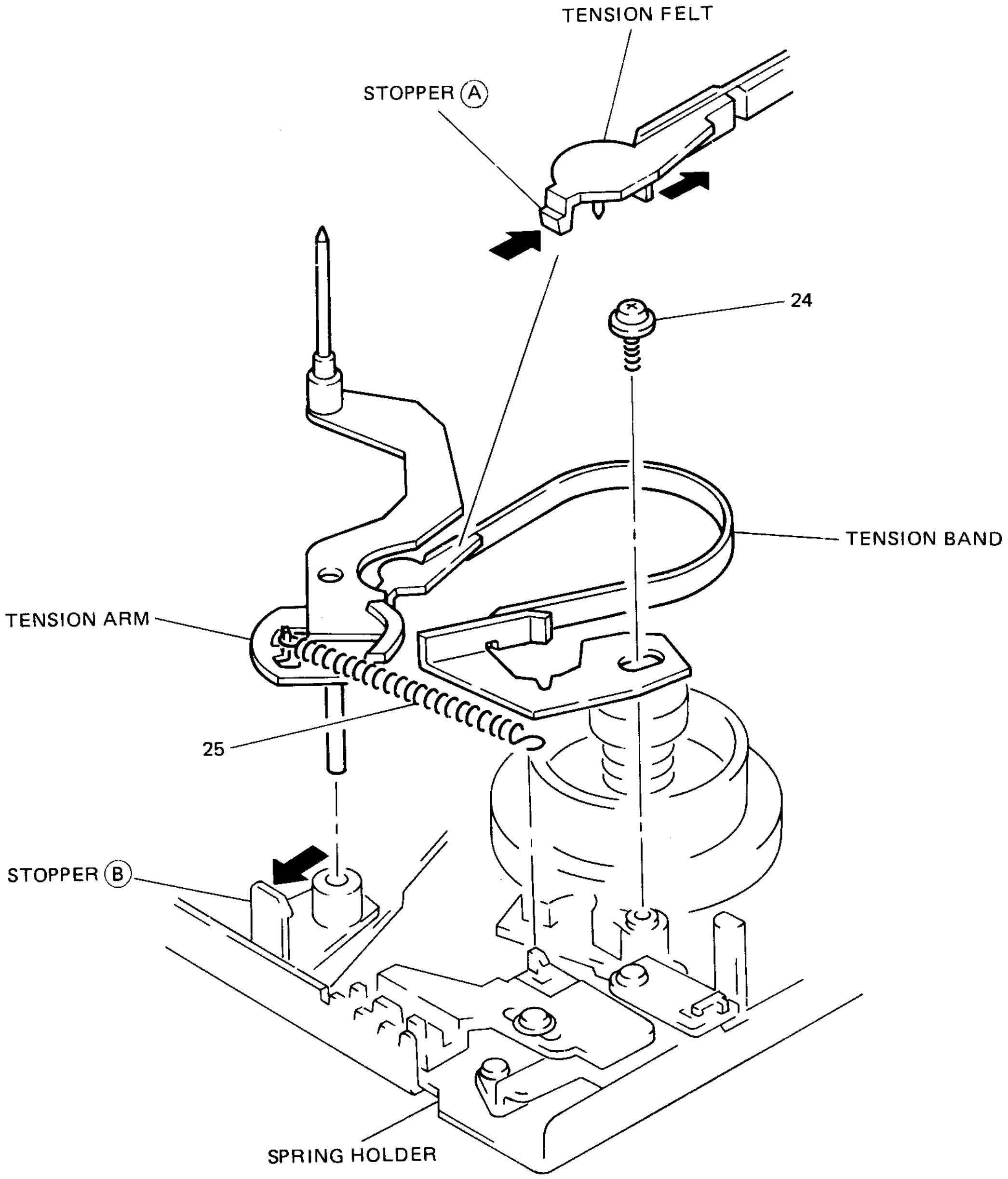

TENSION FELT
STOPPER Ⓐ
24
TENSION BAND
TENSION ARM
25
STOPPER Ⓑ
SPRING HOLDER

Fig. 32

6-11. Take-up reel disk/supply reel disk (Fig. 33)

1. Remove the front loading mechanism (Refer to Item 6-1).
2. Remove washer (26) shown in Fig. 33.

6-12. Pressure roller arm bracket ass'y (Fig. 33)

Pressure roller

1. Remove pressure roller fixing screw (27).

Pressure roller arm

2. Remove pressure roller arm fixing washer (28).

Arm bracket ass'y

1. Remove the front loading mechanism. (Refer to Item 6-1)
2. Remove the take-up reel disk. (Refer to Item 6-11)
3. Remove the pressure roller arm.
4. Remove 2 arm bracket fixing screws (29).

* Install the pressure roller ass'y by the procedure reverse to disassembly, taking care of connections below.

1) The operation arm shaft should be inserted into the hole in the T brake operation arm shown in Fig. 31.
2) The drive arm shaft should be inserted into the hole in the coupling piece shown in Fig. 31.

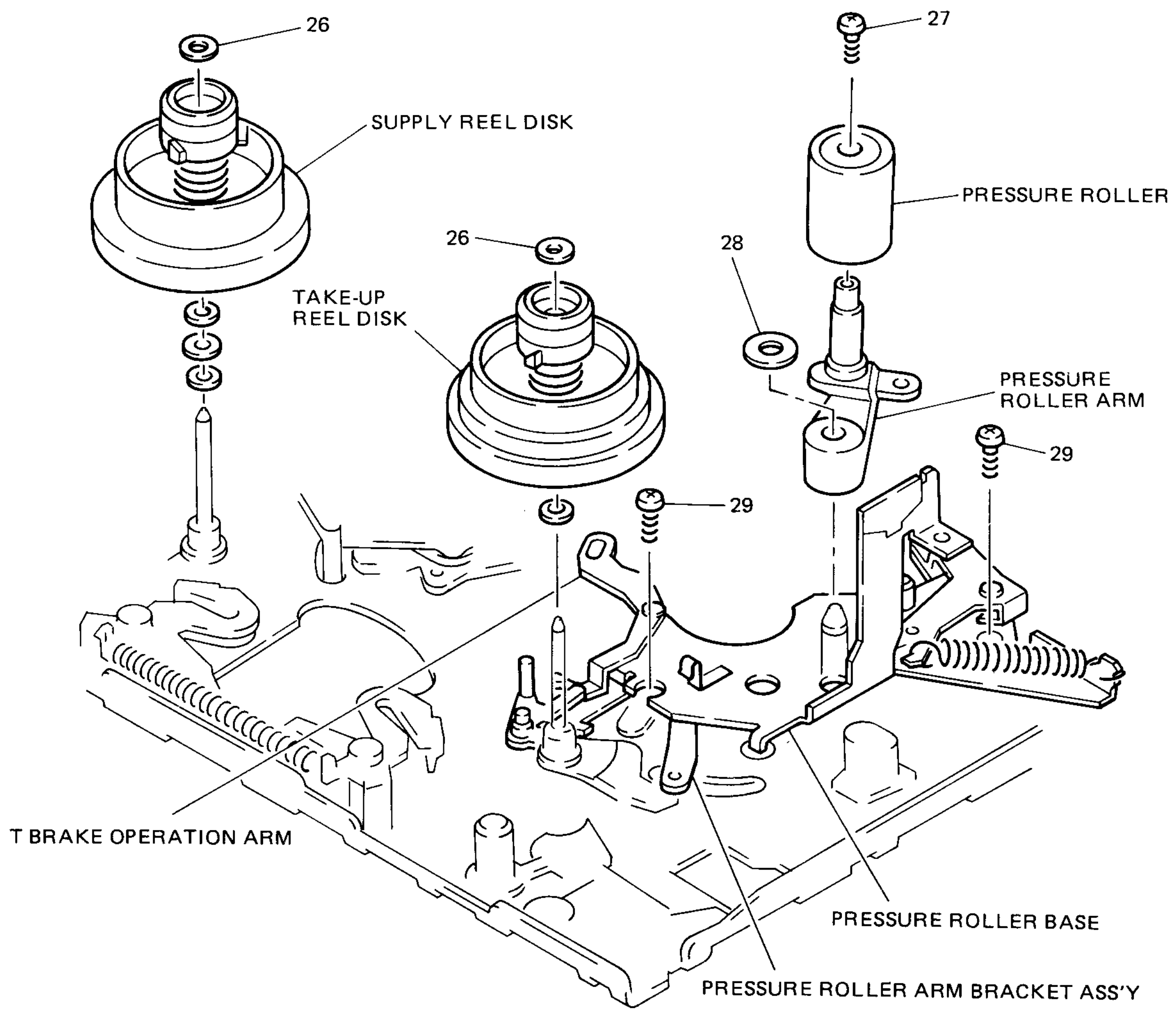

26
SUPPLY REEL DISK
27
PRESSURE ROLLER
26
28
TAKE-UP REEL DISK
PRESSURE ROLLER ARM
29
29
T BRAKE OPERATION ARM
PRESSURE ROLLER BASE
PRESSURE ROLLER ARM BRACKET ASS'Y

Fig. 33

6-13. Guide pole (Fig. 34)

1. Remove nut (30).
2. Remove the guide pole.

* Adjust the height of the guide pole after installing the guide pole. (Refer to the item 8-3)

6-14. FE head (full erase head) (Fig. 34)

1. Remove the guide pole. (Refer to Item 6-13)
2. Remove spring (31).
3. Remove spring (32) from the impedance roller.
4. Pull out the impedance roller ass'y in the direction of the arrow.
5. Remove FE head fixing screw (33) shown in Fig. 36.

* Install the impedance roller arm ass'y/FE head by the procedure reverse to disassembly, and adjust the height of the tape guide after installation is completed. (Refer to the item 8-3)

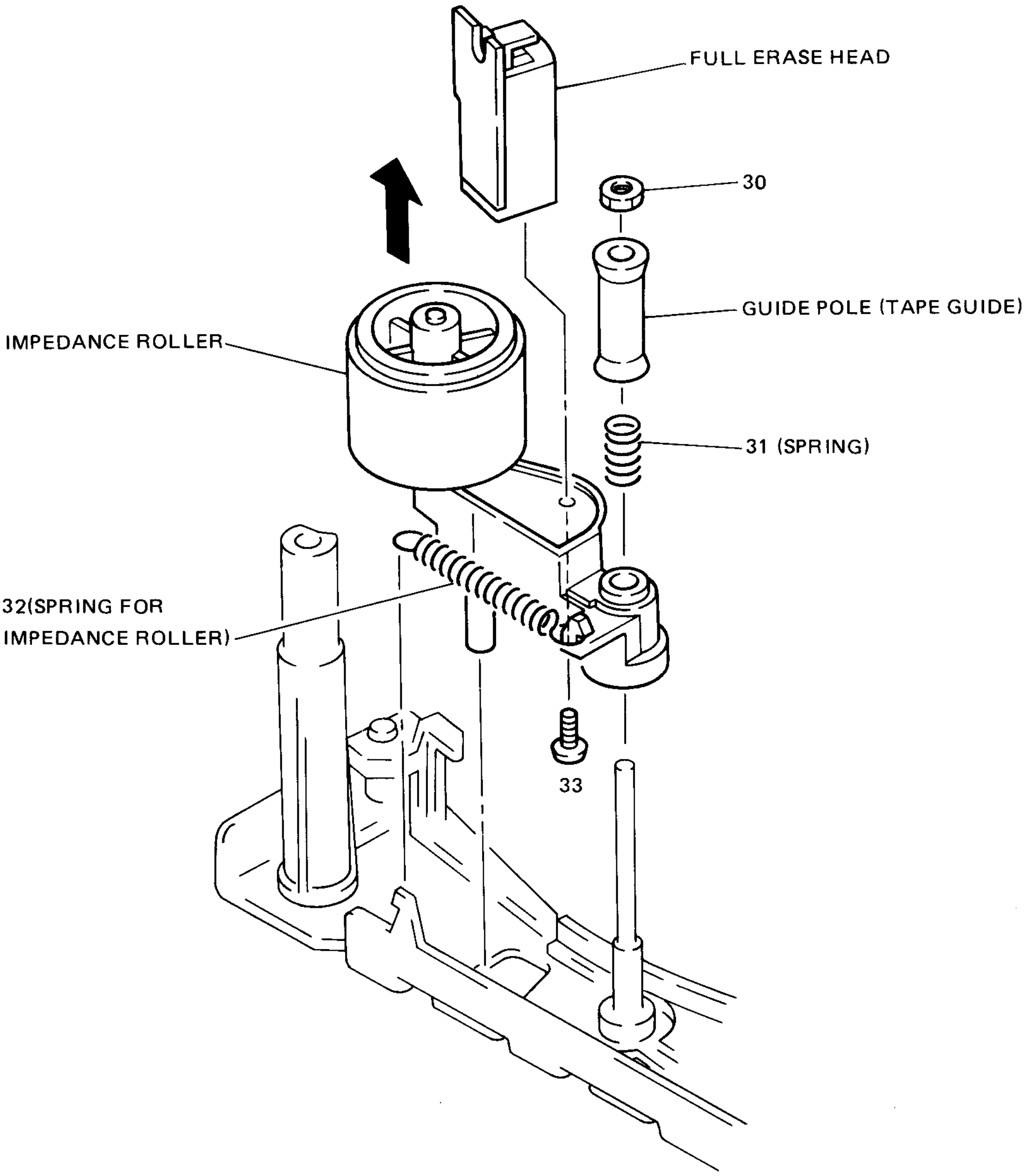

FULL ERASE HEAD
30
GUIDE POLE (TAPE GUIDE)
IMPEDANCE ROLLER
31 (SPRING)
32(SPRING FOR
IMPEDANCE ROLLER)
33

Fig. 34

6-15. AC (Audio/control) head (Fig. 35-1, Fig. 35-2)

1. Remove the wiring guide.
2. Remove head base fixing nut (34) and washer to take out the AC head ass'y.
3. Tighten head fixing screw (35) to the extent that it comes out approx. 1 mm above the top of the AC head base, after replacing the AC head.
4. Tighten head fixing screws (36, 37) until the head base and the AC head base are set parallel based on the height of the convex section of the head base.
5. Insert spring (38) between the AC head ass'y and the chassis, to install the AC head to the chassis.
6. Perform the "AC head adjustment" described in the "Transport system adjustment. After the adjustment is completed, perform the electric adjustment (playback level and bias level).

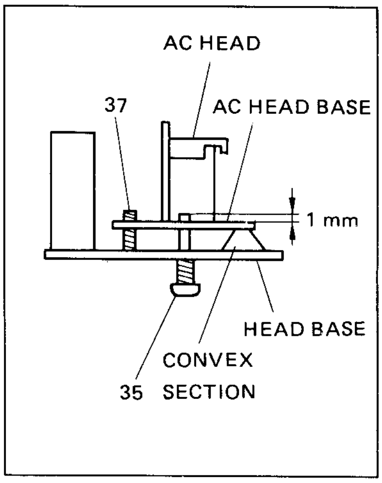

AC HEAD
37
AC HEAD BASE
1 mm
HEAD BASE
CONVEX
35 SECTION

Fig. 35-2

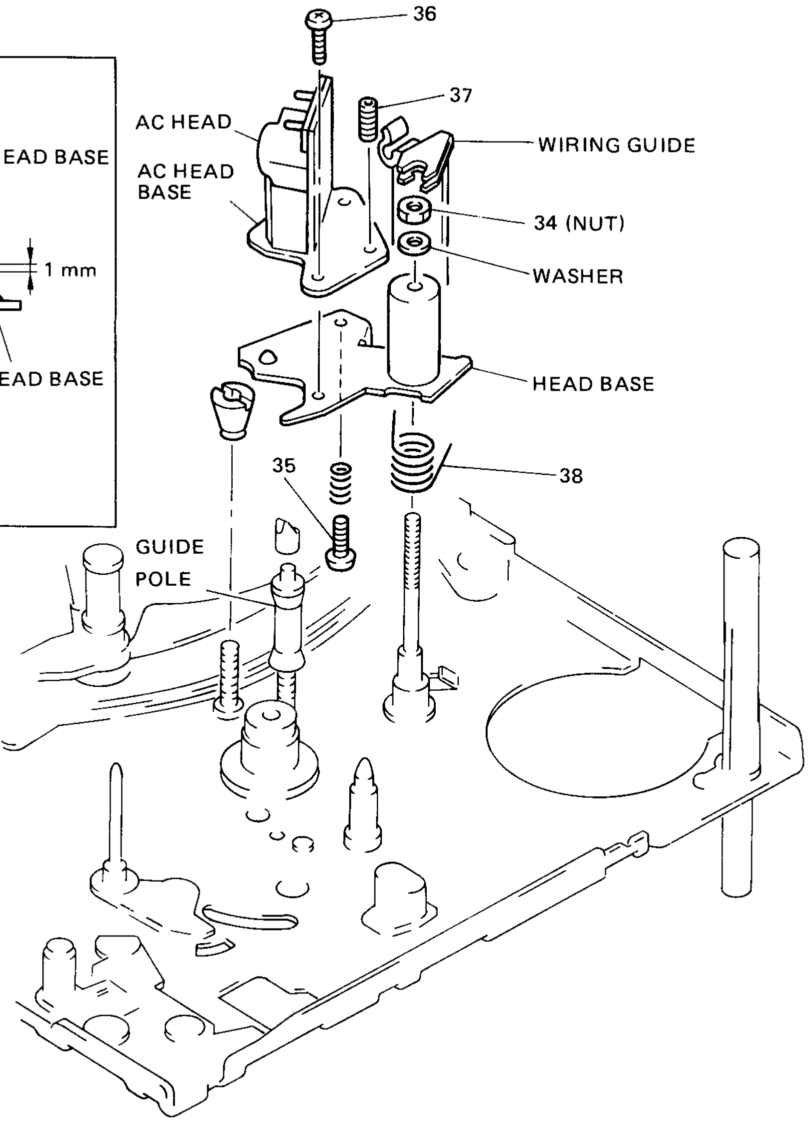

36
AC HEAD
37
WIRING GUIDE
AC HEAD BASE
34 (NUT)
WASHER
HEAD BASE
35
38
GUIDE POLE

Fig. 35-1

7. ELECTRIC CIRCUIT ADJUSTMENT

Test equipment, jigs and tapes required for overall circuit adjustment

1) Color TV set
2) Oscilloscope
3) VTVM
4) Color bar signal generator
5) Frequency counter
6) DC voltmeter
7) Alignment tape
8) Blank tape

Order of adjustment
Perform adjustment in the order shown below.

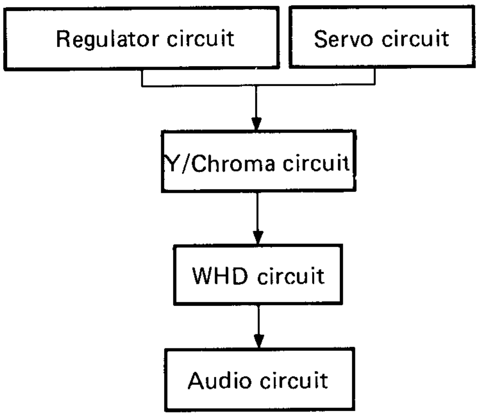
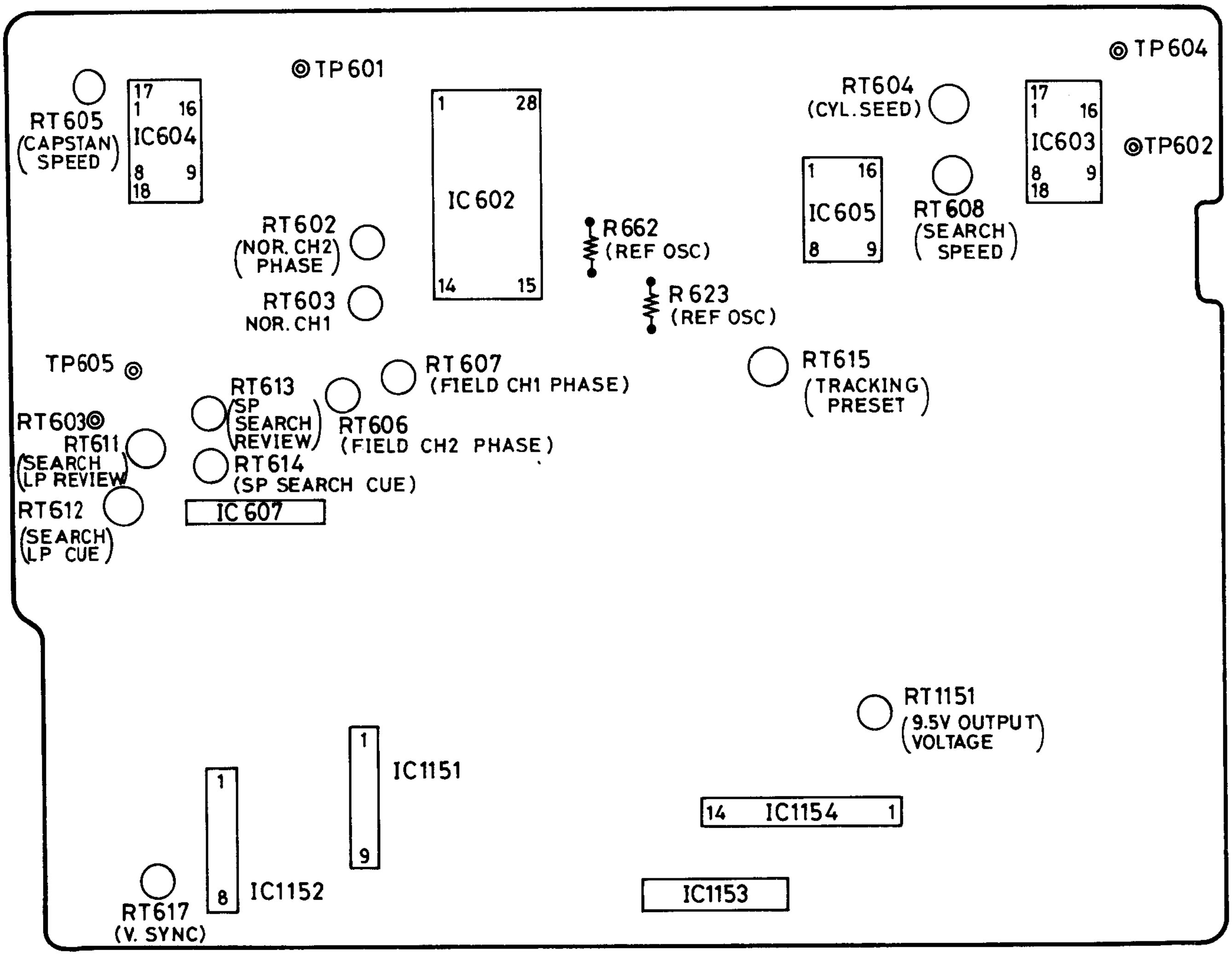

Regulator circuit
Servo circuit
Y/Chroma circuit
WHD circuit
Audio circuit

Fig. 36

7-1. REGULATOR/SERVO CIRCUIT

Remove the top panel, set the VTR horizontal and follow the adjustment procedure shown below.


TP601
TP604
TP602
TP605
RT605 (CAPSTAN SPEED)
IC604
17
1
16
8
9
18
IC602
1
28
14
15
RT604 (CYL. SEED)
IC603
IC605
RT608 (SEARCH SPEED)
RT602 (NOR. CH2 PHASE)
RT603 NOR. CH1
R662 (REF OSC)
R623 (REF OSC)
RT607 (FIELD CH1 PHASE)
RT615 (TRACKING PRESET)
RT613 (SP SEARCH REVIEW)
RT606 (FIELD CH2 PHASE)
RT603
RT611 (SEARCH LP REVIEW)
RT614 (SP SEARCH CUE)
RT612 (SEARCH LP CUE)
IC607
RT1151 (9.5V OUTPUT VOLTAGE)
IC1151
IC1152
IC1154
IC1153
RT617 (V. SYNC)

Regulator/servo P.C. Board [parts side]

1. 9.5V OUTPUT VOLTAGE ADJUSTMENT

Connection

Connect a DC voltmeter to the test point terminal PG601-⑦.

Mode

EE mode

Adjustment point

RT1151

Adjustment

Adjust RT1151 so that the DC voltmeter indicates 9.5V ±0.1V.

2. CYLINDER SPEED ADJUSTMENT

This adjustment is to set the cylinder speed to a constant 1500 rpm.

Connection

1) Connect the color bar signal generator to the video input jack on the front panel or receive a TV program.
2) Connect the oscilloscope between the test point terminals PG601-③ and PG601-④ (GND).

Mode

Set the recording speed select switch to "SP" and place the VTR in the record mode.

Adjustment point

RT604

Adjustment

1) Short-circuit test point terminals PG601-② and PG601-⑦. Adjust RT604 so that the sampling pulse superimposed on the cylinder tach pulse shown in Fig. 37 stands still.

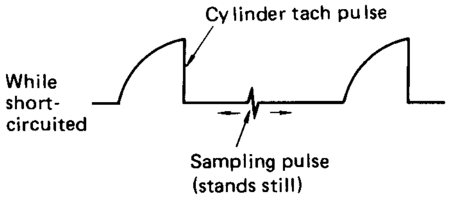

Cylinder tach pulse
While short-circuited
Sampling pulse (stands still)

Fig. 37

2) Disconnect the short-circuit between PG601-② and PG601-⑦ (done in item 1). Check that the sampling pulse stands still at the trailing edge of the cylinder tach pulse shown in Fig. 38.

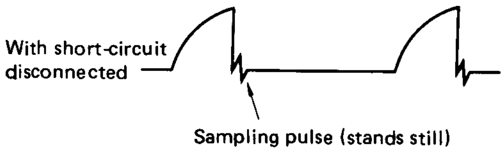

With short-circuit disconnected
Sampling pulse (stands still)

Fig. 38

3. CAPSTAN SPEED ADJUSTMENT

This adjustment is to set the tape speed to a constant 23.39 mm/sec in SP and 11.7 mm/sec in LP.

Connection

1) Connect the color bar signal generator to the video input jack on the front panel or receive a TV program.
2) Connect the oscilloscope between the test point terminals PG601-⑥ and PG601-④ (GND).

Mode

Set the tracking VR to the "click" point and the recording speed select switch to "LP", and place the unit in the record mode.

Adjustment point

RT605

Adjustment

1) Short-circuit test point terminals PG601- ② and PG601- ⑦ . Adjust RT605 so that the sampling pulse superimposed on the tracking MM charge curve stands still.

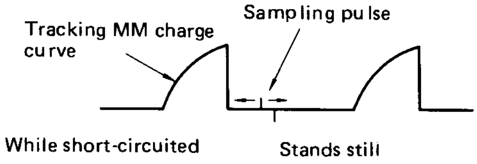

Tracking MM charge curve
Sampling pulse
While short-circuited
Stands still

Fig. 39

2) Disconnect the short-circuit between PG601- ② and PG601- ⑦ (done in item 1). Check that the tracking pulse stands still around the leading edge of the tracking MM charge curve shown in Fig. 40.

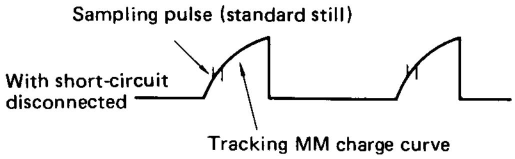

Sampling pulse (standard still)
With short-circuit disconnected
Tracking MM charge curve

Fig. 40

Reference

The tape speed in the SP mode is not required to adjust. When confirming the speed, set the recording speed select switch to "SP" and short-circuit between test point terminals PG601- ② and PG601- ⑦ while recording. Confirm that the sampling pulse shown in Fig. 39 stands still at that time.

4. REFERENCE OSCILLATION FREQUENCY ADJUSTMENT

Connection

Connect the frequency counter to the audio output jack on the rear panel.

Mode

Short-circuit test point terminals PG601-⑧ and PG601-⑦ and set only the servo phase control system (IC602) to the record mode. Then, play back the audio track 3 kHz section of the alignment tape.

Adjustment point

R622, R623.

Adjustment

Confirm that the reading of the frequency counter is 3000 Hz ± 15 Hz. Omit R622 when the reading is 3015 Hz or more. On the contrary, omit R623 when it is 2985 Hz or less.

5. NORMAL VIDEO HEAD CH1/CH2 PHASE ADJUSTMENT

Connection

1) Connect the "EXT TRIG" of the oscilloscope to the test point terminal PG601-⑨ (SW25 signal output) and PG601-④(GND), and the "INPUT" of the oscilloscope to the video output jack on the rear of the VTR.
2) Connect the monitor TV to the VHF output jack on the rear of the VTR.

Mode

Play back the alignment tape.

Adjustment point

RT603 (CH1), RT602 (CH2)

Adjustment

Set the sync slope select switch of the oscilloscope to " – " when adjusting the phase of CH1, and set to " + " when adjusting the phase of CH2. Then adjust RT603 and RT602 so that the switching points of respective channels are 6.5H ± 0.5H before the vertical sync signal in the video signal.

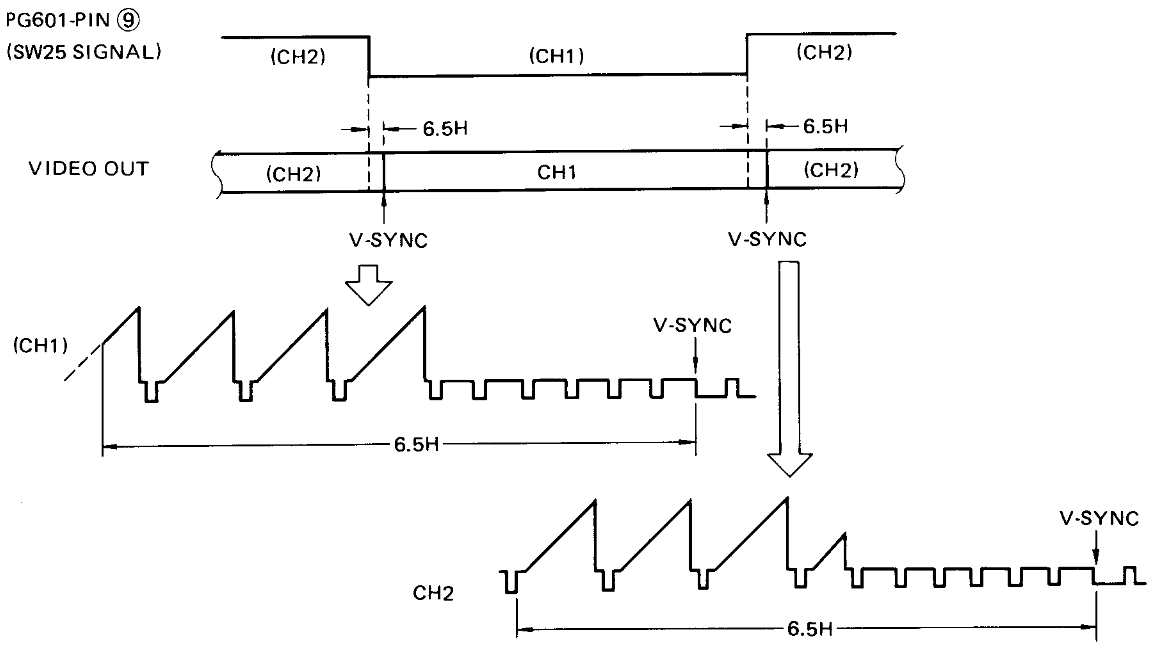


Fig. 41

6. TRACKING PRESET ADJUSTMENT

Connection

1) Connect the color bar signal generator to the video output jack on the rear panel or receive a TV program.
2) Connect the oscilloscope to the test point terminal TP202 on the Y/chroma PC Board.

Mode

Set the tracking VR to the click point and the recording speed select switch to "SP", and perform recording for several minutes. Then play back this section for adjustment.

Adjustment point

RT615

Adjustment

Adjust RT615 so that the output of the FM envelope is at max. Next, turn the tracking VR left and right centering on the click point to check that RT615 is adjusted to the max. output point.

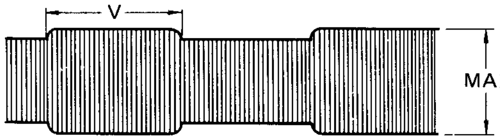


Fig. 42

7. FIELD VIDEO HEAD CH1/CH2 PHASE ADJUSTMENT

Perform this adjustment after the normal video head CH1/CH2 adjustment described in Item 5.

Connection

1) Connect the "EXT TRIG" terminal of the oscilloscope to test point terminals PG601-⑨ (SW25 signal output), PG601-④ (GND) and the "INPUT" of the oscilloscope to the video output jack on the rear panel.
2) Connect the monitor TV to the VHF output jack on the rear panel.

Mode

Set the recording speed select switch to "SP" and record for several minutes. Then play back this section and set the VTR to the play pause mode.

Adjustment point

RT607 (CH1), RT606 (CH2).

Adjustment

Set the sync slope select switch of the oscilloscope to "−" when adjusting the phase of CH1 and to "+" when adjusting the phase of CH2. Then adjust RT607 and RT606 so that the switching points of the respective channels are 450 µsec - 500 µsec before the vertical sync signal in the video signal.

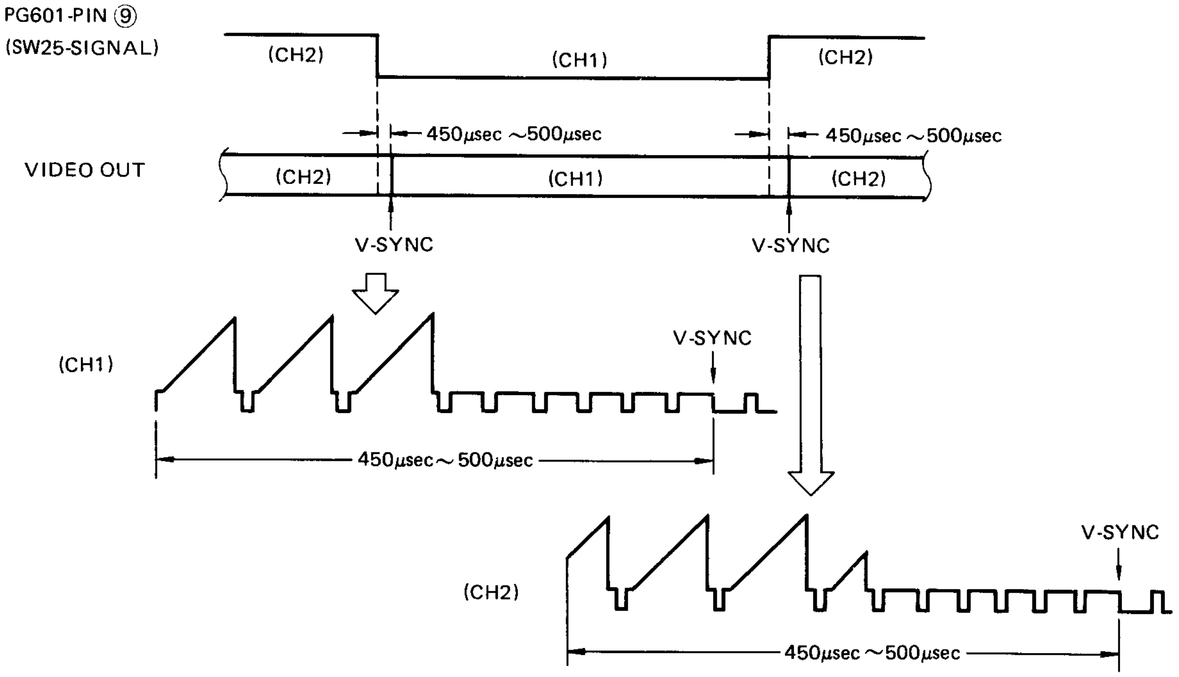


Fig. 43

8. VISUAL SEARCH SPEED ADJUSTMENT (LP mode)

Connection

1) Receive a TV programme or connect the color bar signal generator to the video input jack.
2) Connect the frequency counter to the test point terminal TP602 (DFG output) on the SRR PC Board.
3) Connect the monitor TV to the VHF output jack.
4) Short-circuit test point terminals PG601-② and ⑦.

Mode

Set the recording speed select switch to "LP" and record.

Adjustment point

RT608, RT611 (REVIEW), RT612 (CUE)

Adjustment

○ **Review visual search**

1) Play back the recorded section in the REVIEW visual search mode.
2) Adjust RT608 so that the reading of the frequency counter is 1,470 Hz.
3) Adjust RT611 while observing the monitor TV screen so that the noise bar on the screen stops.

○ **Cue visual search**

4) Play back the recorded section in the CUE visual search mode.
5) Adjust RT612 while observing the monitor TV screen so that the noise bar on the screen stops.
6) Release short-circuit between test point terminals PG601-② and ⑦, and confirm that the noise bar stops in both the REVIEW and CUE modes.

9. VISUAL SEARCH SPEED ADJUSTMENT (SP MODE)

Connection

1) Connect the monitor TV to the VHF output jack.
2) Short-circuit test point terminals PG601-(2) and (7).

Mode

Play back the alignment tape.

Adjustment point

RT613 (REVIEW), RT614 (CUE)

Adjustment

○ **Review visual search**

1) Play back the alignment tape in the REVIEW visual search mode.
2) Adjust RT613 while observing the monitor TV screen so that the noise bar on the screen stops.

○ **Cue visual search**

3) Play back the alignment tape in the CUE visual search mode.
4) Adjust RT614 while observing the monitor TV screen so that the noise bar on the screen stops.
5) Release the short-circuit between test point terminals PG601-② and ⑦ and confirm that the noise bar stops in both the REVIEW and CUE modes.

10. ADDITIONAL V SYNC SIGNAL ADJUSTMENT

Connection

1) Receive a TV programme or connect the color bar signal generator to the video input jack.
2) Connect the monitor TV to the VHF output jack.

Mode

Set the recording speed select switch to "SP" and record.

Adjustment point

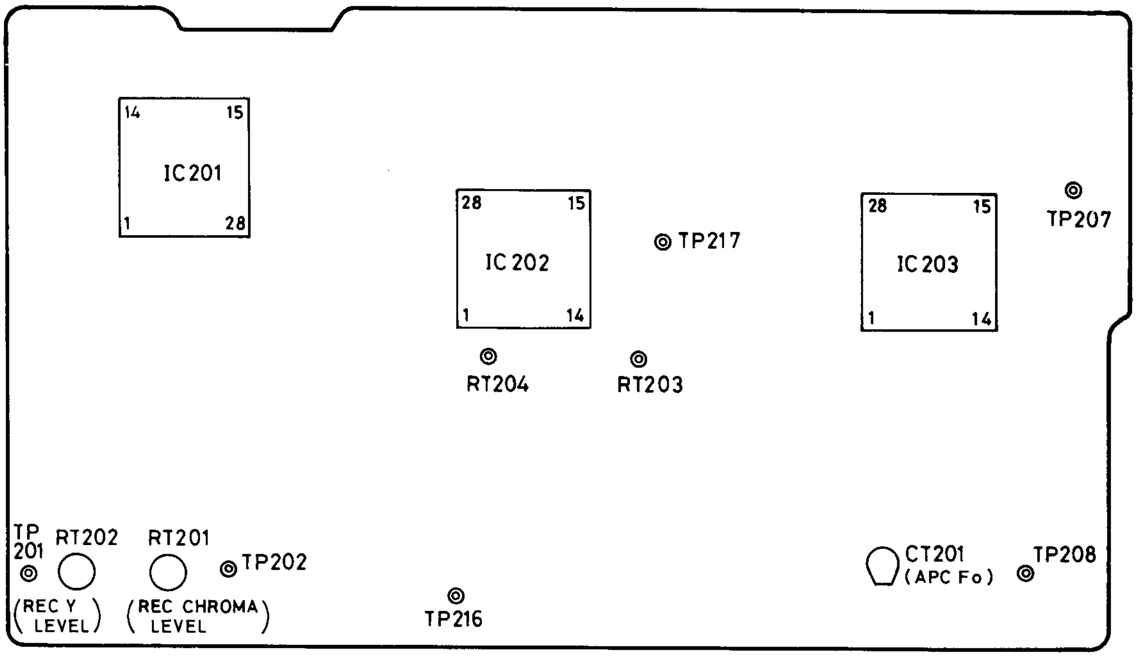
RT617

Adjustment

1) Play back the recorded section in the still mode.
2) Press the remote control F. ADV button while observing the monitor TV screen to remove the noise bar from the screen.
3) Adjust RT617 while observing the monitor TV screen so that the vertical rattling of the picture is minimized.

7-2. Y/CHROMA CIRCUIT

Remove the top cover and regulator/servo PC Board and adjust as follows.


14
15
IC201
1
28
28
15
IC202
1
14
TP217
28
15
IC203
1
14
TP207
RT204
RT203
TP 201
RT202
RT201
TP202
(REC Y LEVEL)
(REC CHROMA LEVEL)
TP216
CT201 (APC Fo)
TP208

Y/chroma P.C.B. (Parts side)

1. RECORD Y/CHROMA LEVEL ADJUSTMENT

The record Y/chroma level is set to the adjusted value shown in Table 1 according to the numerals marked on the upper cylinder shown in Fig. 44. When the cylinder or parts in the Y/chroma circuit are replaced, check the cylinder mark before adjustment.

Record Y level

Level
150mVp-p

Record chroma level

Cylinder mark	Level
No mark	25 mVp-p
1	30mVp-p
2	35mVp-p
3	40mVp-p
4	40mVp-p

Table 1

Connection

1) Receive a TV programme or connect the color bar signal generator to the video input jack on the rear panel.
2) Connect the oscilloscope to the test point terminal TP201.

Mode

Set the VTR to the record mode.

Adjustment point

RT201 (Record chroma level)
RT202 (Record Y level)

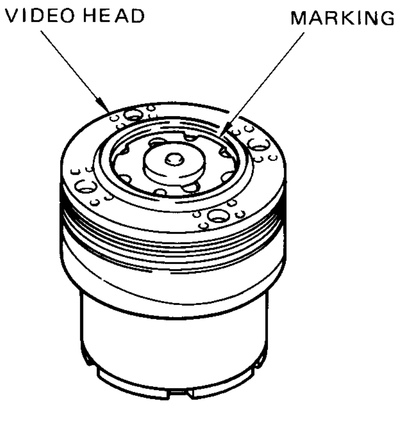

VIDEO HEAD
MARKING

Fig. 44

Adjustment

Turn RT202 fully counterclockwise, and then adjust RT201 so that the reading of the oscilloscope corresponds to the marked value. Next, adjust RT202 so that the reading of the oscilloscope is 150mVp-p. Fig. 45. Refer to Table 1.

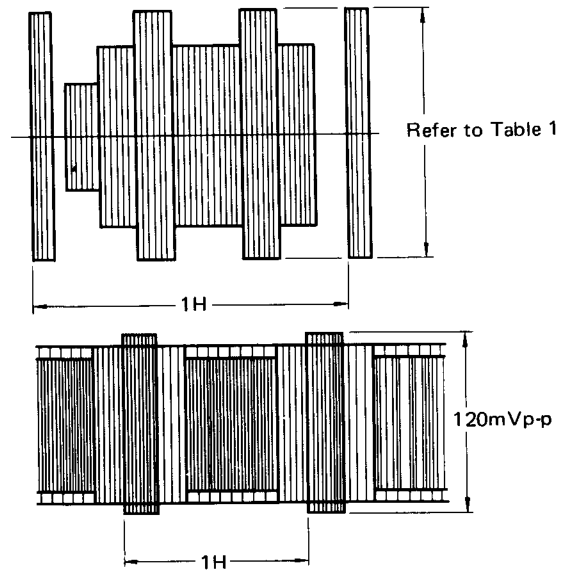
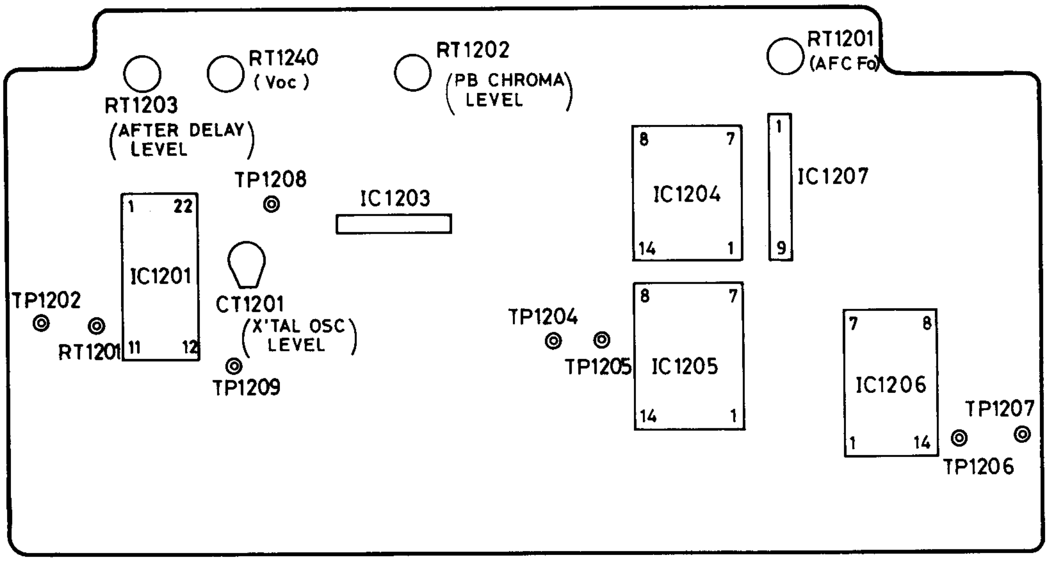

Refer to Table 1
1H
120mVp-p
1H

Fig. 45

2. APC F0 (4.44 MHz) ADJUSTMENT

Connection
Connect the frequency counter to the test point terminal TP208.
Mode
EE mode
Adjustment point
CT201
Adjustment
Adjust CT201 so that the reading of the frequency counter is 4.435572 MHz ± 20 Hz.

7-3. WHD CIRCUIT


RT1203
(AFTER DELAY LEVEL)
RT1240
(Voc)
RT1202
(PB CHROMA LEVEL)
RT1201
(AFC F0)
TP1208
IC1203
IC1204
IC1207
IC1201
CT1201
(X'TAL OSC LEVEL)
TP1202
RT1201
TP1209
TP1204
TP1205
IC1205
IC1206
TP1207
TP1206
1
22
11
12
8
7
14
1
9

WHD P.C.B. (Parts side)

1. Vco ADJUSTMENT

Connection
1) Receive a TV programme or connect the color bar signal generator to the video input jack.
2) Connect the frequency counter to the test point terminal TP2101.
3) Insert a 22 μ/10V electrolytic capacitor between IC1201 pin ③ and GND.

Mode
EE mode with the recording speed select switch set to "LP".
Adjustment point
RT1204
Adjustment
Adjust RT1204 so that the reading of the frequency counter is 31.250 kHz.

2. X'TAL OSCILLATOR LEVEL ADJUSTMENT

Connection
1) Receive a TV programme or connect the color bar signal generator to the video input jack.
2) Connect the oscilloscope to IC1201 pin ⑭.
3) Connect the collector of Q1207 to GND.

Mode
EE mode with the recording speed select switch set to "LP".
Adjustment point
CT1201
Adjustment
Adjust CT1201 so that the waveform level on the oscilloscope is max.

3. PLAYBACK CHROMA LEVEL ADJUSTMENT

Connection

1) Connect the base of Q1206 to GND.
2) Connect the oscilloscope to IC1203 pin ② and pin ⑦.

Mode

Play back the alignment tape with the recording speed select switch set to "LP".

Adjustment point

RT1202

Adjustment

Adjust RT1202 so that the waveform P-P value on the oscilloscope is the same at IC1203 pin ② and pin ⑦.

4. AFC Fo ADJUSTMENT

Connection

1) Connect a 22µ/10V electrolytic capacitor in parallel to IC1201.
2) Connect the frequency counter to the test point terminal TP1206.
3) Connect the collector of Q1207 to GND.
4) Receive a TV programme or connect the color bar signal generator to the video input jack.

Mode

EE mode with the recording speed select switch set to "LP".

Adjustment point

RT1201

Adjustment

Adjust RT1201 so that the reading of the frequency counter is 15.625 kHz.

5. AFTER DELAY LEVEL ADJUSTMENT

Connection

1) Insert a 22 µ /10V electrolytic capacitor between IC1201 pin ⑩ and GND.
2) Connect the oscilloscope to the video input jack.

Mode

Set the recording speed select switch to "LP" and play back the alignment tape in the search mode.

Adjustment point

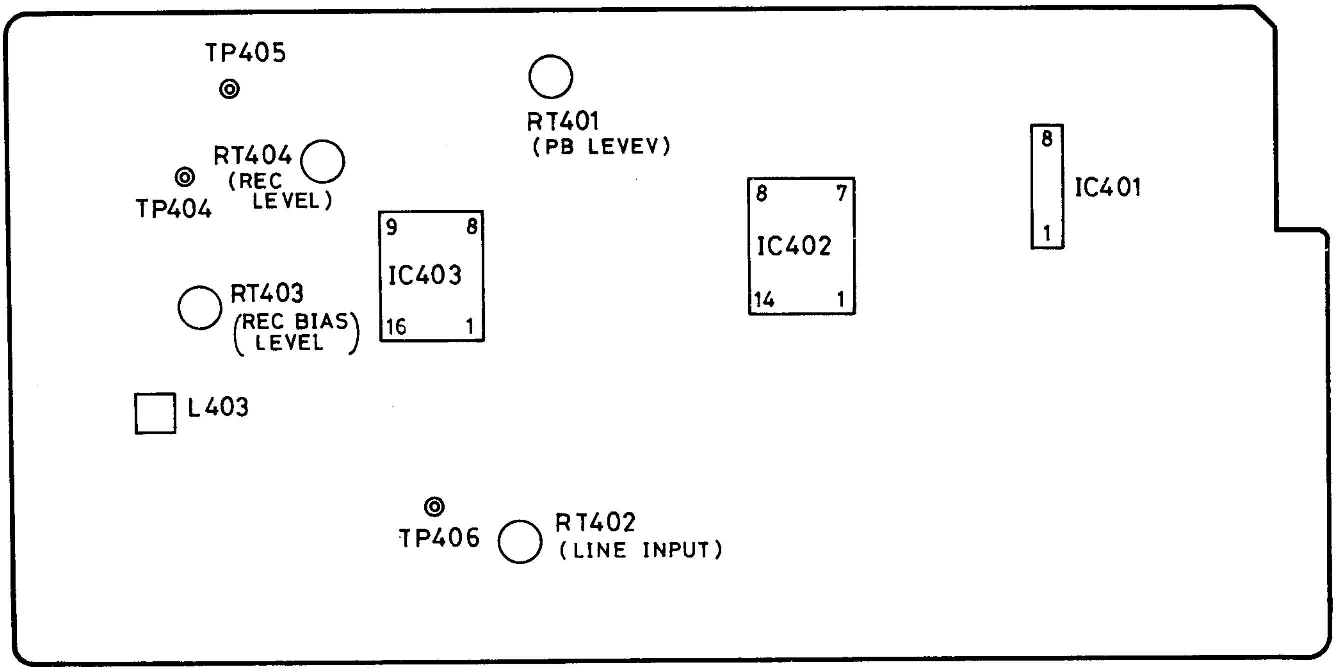
RT1203

Adjustment

Adjust RT1203 so that the waveform P-P value on the oscilloscope is the same.

7-4. AUDIO CIRCUIT

Remove the top cover and adjust as follows.


TP405
RT401
(PB LEVEV)
RT404
(REC LEVEL)
TP404
8
IC401
1
8 7
IC402
14 1
9 8
IC403
16 1
RT403
(REC BIAS LEVEL)
L403
TP406
RT402
(LINE INPUT)

Audio P.C.B. (Parts side)

1. AUDIO PLAYBACK LEVEL ADJUSTMENT

Connection

Connect a VTVM to the audio output jack on the rear panel.

Mode

Play back the audio track 1 kHz section of the alignment tape.

Adjustment point

RT401

Adjustment

Adjust RT401 so that the reading of the VTVM is −6 dBm ±1 dB.

2. BIAS TRAP ADJUSTMENT

Connection

Connect the oscilloscope to the test point terminal TP404.

Mode

Load a blank to and set to the record mode.

Adjustment point

L403

Adjustment

Adjust L403 so that the reading of the bias leak level on the oscilloscope is minimum.

3. AUDIO RECORD BIAS LEVEL ADJUSTMENT

Connection

Connect the VTVM to both terminals (2 pins) of the AC head circuit board shown in Fig. 46.

Mode

Set the recording speed select switch to "SP" and set the VTR to the record mode with the no signal input.

Adjustment point

RT403

Adjustment

Adjust RT403 so that the reading of the VTVM is 3.0 mV.

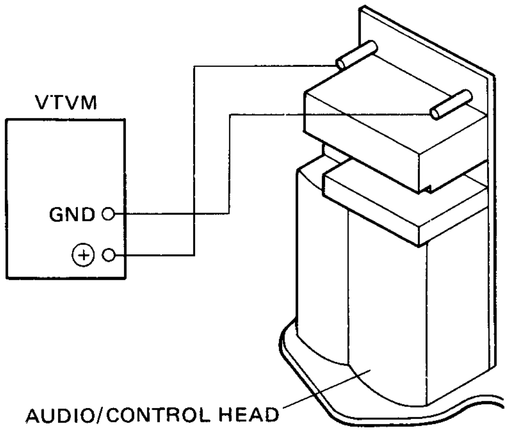

VTVM
GND
⊕
AUDIO/CONTROL HEAD

Fig. 46

4. LINE INPUT ADJUSTMENT

Connection

1) Connect an audio signal generator (1 kHz, –20 dBm) to the audio input jack.
2) Connect the VTVM to the audio output jack.

Mode

EE mode

Adjustment point

RT402

Adjustment

Adjust RT402 so that the reading of the VTVM is –4.0±0.2 dBm.

5. RECORD LEVEL ADJUSTMENT

Connection

1) Connect the audio signal generator (1 kHz, –20 dBm) to the audio input jack.
2) Connect the VTVM to TP405.

Mode

Load a blank tape and set the VTR to the record mode.

Adjustment point

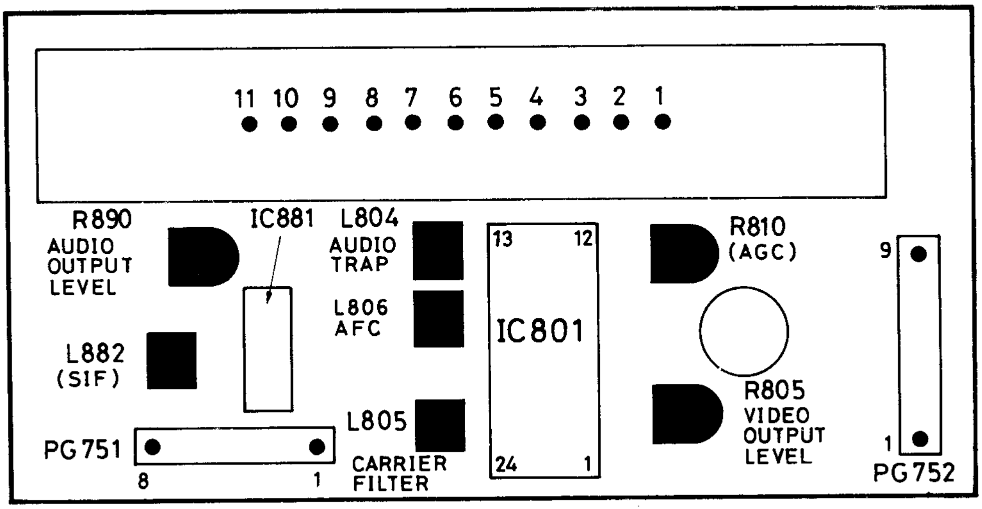
RT404

Adjustment

Adjust RT404 so that the reading of the VTVM is –9 dBm: Then confirm that it is –6 dBm± 0.5 dB at the audio output jack when the recorded section is played back.

7-5. TUNER/IF CIRCUIT (For UK model)

Note: In the unit, the tuner pack and IF is a single unit. It has been adjusted carefully, but if it gets out of adjustment, adjust it by the following procedure.
When it is desired to adjust the tuner pack and IF remove this block from the unit.


11 10 9 8 7 6 5 4 3 2 1
R890
AUDIO OUTPUT LEVEL
IC881
L804
AUDIO TRAP
L806
AFC
L882
(SIF)
L805
CARRIER FILTER
PG751
8
1
IC801
13
12
24
1
R810
(AGC)
R805
VIDEO OUTPUT LEVEL
9
1
PG752

IF P.C.B (Parts side)

1. CARRIER FILTER ADJUSTMENT

Connection

1) Connect the sweep marker generator (Output: −30 ±10 dBm, marker frequency: 39.5 MHz) to IC801 pin ⑥ of the IF pack via the coupling circuit shown in Fig. 47.
2) Supply +8.9V DC to IC801 pin ⑫ , +12V DC to PG751-PIN⑤.
3) Connect the oscilloscope to PG751-pin ② and observe the IF signal waveform.

Mode

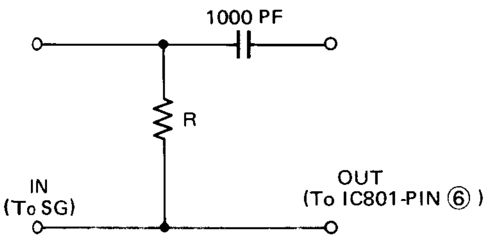
EE mode

Adjustment Point

L805

Adjustment

Adjust the core of L805 so that the 39.5 MHz±50 kHz component of the waveform of video output is maximum. (See Fig. 48)


1000 PF
R
IN
(To SG)
OUT
(To IC801-PIN ⑥)

R: SELECT A VALUE TO MATCH OUTPUT IMPEDANCE OF SIGNAL GENERATOR

Fig. 47

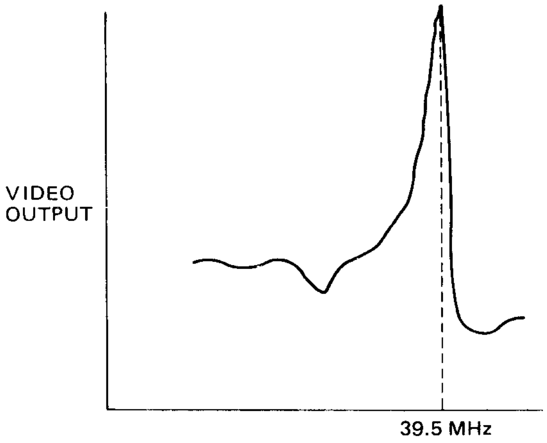


Fig. 48

2. AUDIO TRAP ADJUSTMENT

Connection

1) Connect the sweep marker generator to IC801 pin-⑥ of the IF pack via the coupling circuit shown in Fig. 47. (−20 ± 10 dBm, marker frequency: 33.50 MHz, 41.5 MHz)
2) Connect the oscilloscope to PG751 pin- ②, +12V DC to PG751 pin-⑤.
3) Supply +8.9V DC to IC801 pin- ⑫ .

Mode

EE mode

Adjustment point

L804

Adjustment

Adjust the core of L804 so that the level of audio trap frequency (33.5 MHz) is minimum. (See Fig. 49).

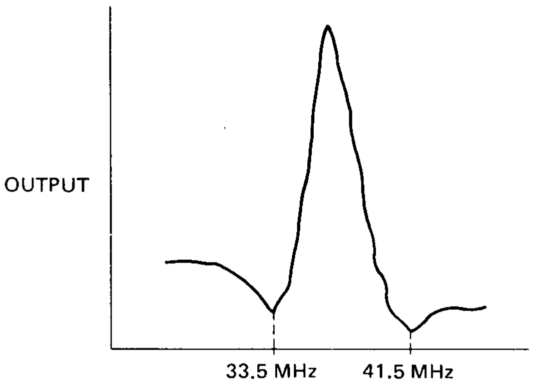


Fig. 49

3. AFC ADJUSTMENT

Connection

1) Connect the sweep marker generator (Output: −4 ±5 dBm, marker frequency: 39.5 MHz) to tuner pack-pin ⑨ via the coupling circuit shown in Fig. 47.
2) Supply +9.1V DC to IC801- pin ⑫ +12V DC to PG751-pin⑤.
3) Connect the oscilloscope to PG572 pin- ① via the coupling circuit shown in Fig. 50.

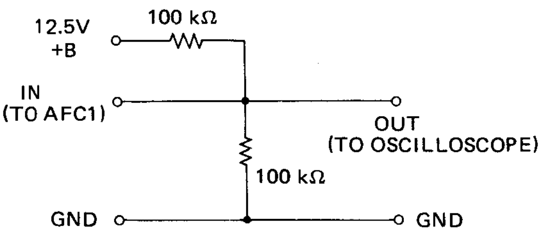


Fig. 50

Mode

EE mode

Adjustment point

L806

Adjustment

Adjust L806 so that the output voltage at 39.5 MHz is 6.5V ±1.0V. (See Fig. 51)

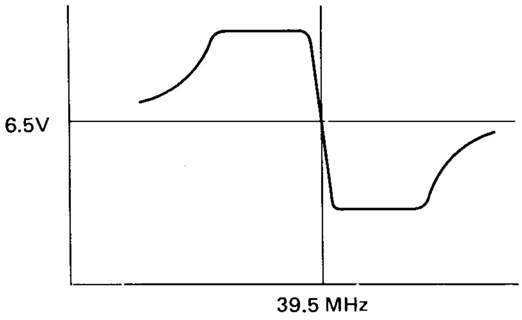


Fig. 51

4. SIF ADJUSTMENT

Connection

1) Connect the AM signal generator (33.5 MHz± 5 kHz, −60 ± 5 dBm, Audio signal (400 Hz): AM 30% modulation) to IC801 pin- ② of IF pack via the coupling circuit shown in Fig. 47.
2) Connect the oscilloscope to PG751 pin- ④ and observe the audio IF signal waveform.
3) Supply +8.9V DC to IC801 pin ⑫ + 12V DC to PG751 pin-⑤.

Mode

EE mode

Adjustment point

L882

Adjustment

Adjust L882 so that the output is minimum.

5. VIDEO OUTPUT ADJUSTMENT

Connection

Connect the color bar RF generator to the ANTENNA INPUT terminal of VTR.

(Input −41 ± 10 dBm, modulation degree 87.5%)

Connect the oscilloscope to PG751 pin-②.

Mode

1) EE mode
2) Tune the VTR for best reception by observing the picture on the screen.
3) Close the channel preset cover. (AFC switch: ON)

Adjustment point

R805

Adjustment

Adjust R805 so that the output level is Vp-p. (See Fig. 52)

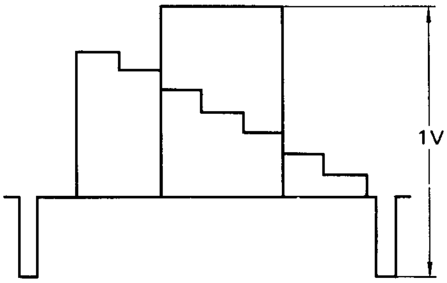


Fig. 52

6. AUDIO OUTPUT LEVEL ADJUSTMENT

Connection

1) Connect the TV signal generator to the AERIAL INPUT terminal of VTR.
   (Input: −41 ± 10 dBm, 30% modulation with sine-wave audio signal at 400 Hz).
2) Connect the oscilloscope to PG751 pin-④.

Mode

1) EE mode
2) Tune the VTR for best reception by observing the picture on the screen.
3) Close the channel presset cover (AFC switch: ON)

Adjust

Adjust R890 so that the output level is equal −15 ±1.5 dBm.

7. AGC ADJUSTMENT

Connection

Connect the color bar-RF-generator to the ANTENNA INPUT terminal of VTR.

(Input: For UK model CH68, −49 dBm, −44 dBm, modulation degree 87.5%)

Mode

1) EE mode
2) Tune the VTR for best reception by observing the picture on the screen.
3) Close the channel preset cover. (AFC switch: ON)

Adjustment point

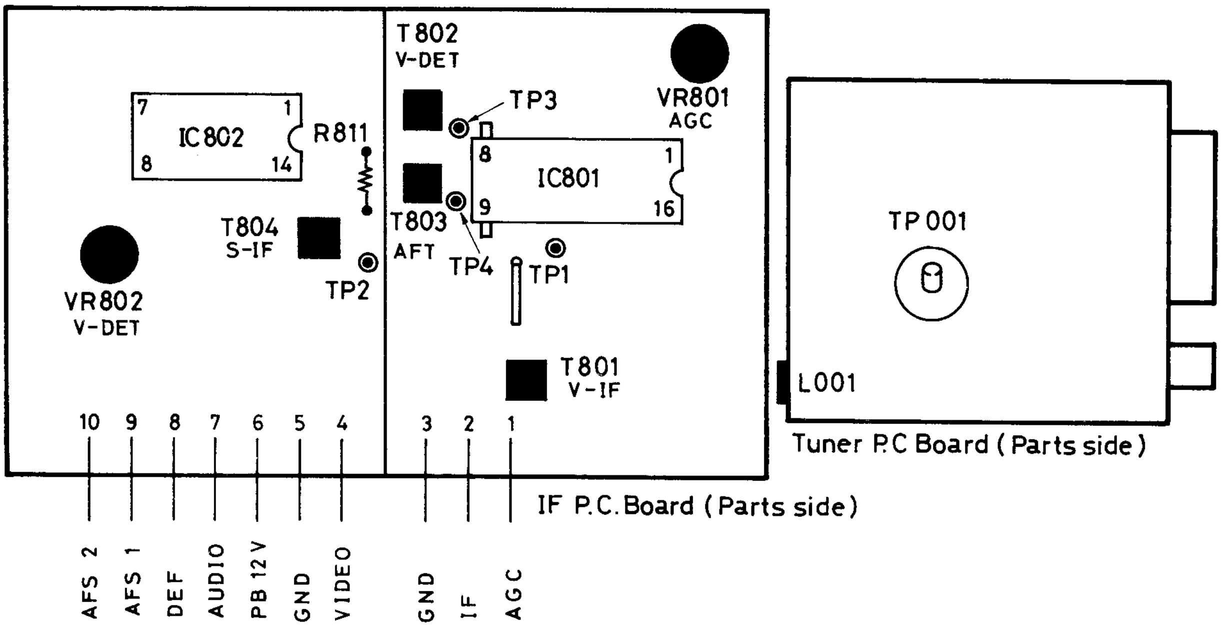
R810

Adjustment

Measure the voltage at the AGC terminal of tuner pack-pin ④ and adjust R810 so that the voltage is 9.2V ± 0.1V.

7-6. TUNER/IF CIRCUIT [Except for UK model]

Adjust the tuner/IF section after removing the top cover and the shield cover of the IF section.


T802
V-DET
TP3
VR801
AGC
IC802
7
1
8
14
R811
8
1
IC801
9
16
T803
AFT
TP4
TP1
T804
S-IF
TP2
VR802
V-DET
T801
V-IF
TP001
L001
Tuner P.C Board (Parts side)
IF P.C.Board (Parts side)
10 9 8 7 6 5 4 3 2 1
AFS 2
AFS 1
DEF
AUDIO
PB 12 V
GND
VIDEO
GND
IF
AGC

1. V-IF ADJUSTMENT

Connection

1) Connect the output of the TV-IF signal generator (markers, 31.9 MHz, 33.40 MHz, 34.47 MHz, 38.9 MHz, 40.4 MHz) to the IF input pins (2) and (3) (GND) of the IF circuit via the coupling circuit shown in Fig. 53.
2) Connect a resistor (50 Ω) between TP3 and TP4, and then connect the oscilloscope to TP3.

Mode

EE mode

Adjustment point

T801

Adjustment

1) Adjust T801 so that the characteristics shown in Fig. 60 are obtained with sensitivity of the oscilloscope at max, and output of the TV-IF signal generator at the minimum required level.
2) Remove the resistor (50 Ω) described in item (2) of "Connecting test equipment", after adjustment is completed.

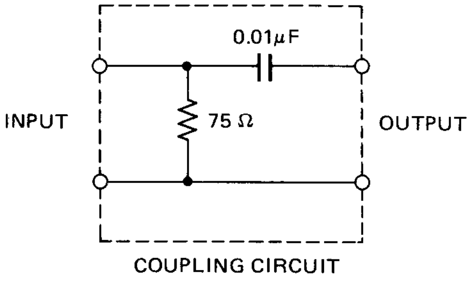

0.01μF
INPUT
75 Ω
OUTPUT
COUPLING CIRCUIT

Fig. 53

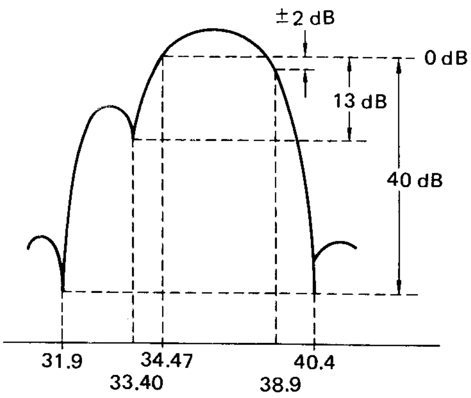


Fig. 54

2. V-DET ADJUSTMENT

Connection

1) Connect the output of the TV-IF signal generator (markers, 38.9 MHz, 34.47 MHz) to the IF input pins ② and ③ (GND) of the IF circuit.
2) Connect the output (DC6 ~12V) of the DC power generator to the test point terminal TP1.
3) Connect the oscilloscope to R811 (T804 side) of the IF circuit.

Mode

EE mode

Adjustment point

T802, VR802.

Adjustment

1) Adjust the output of the 38.9 MHz oscillator so that the input level of the IF input pin is 90 dBμ.
2) Set the oscilloscope to the DC mode and adjust the output voltage of the DC power generator so that the value (V_1) is – 1.5V.
3) Adjust T802 so that V_1 is max. When V_1 is set to –1.5V ± 0.2V or more, readjust the output voltage of the DC power generator described in "Adjustment procedure (1)".
4) Adjust T802 so that the output of V_1 is max. and then set the oscilloscope to the "AC" mode. Adjust the output of the TV signal generator so waveform A shown in Fig. 55 is 1.2 Vp-p.
5) Check that the outputs at the 34.47 MHz and 38.9 MHz sections of the waveform are the same (B = C). Readjust V-IF (shown in item 1) when the outputs are very different.
6) Connect the oscilloscope to the video output pin (4) of the IF circuit. Adjust VR802 so that waveform A shown in Fig. 55 is 1.0 Vp-p.

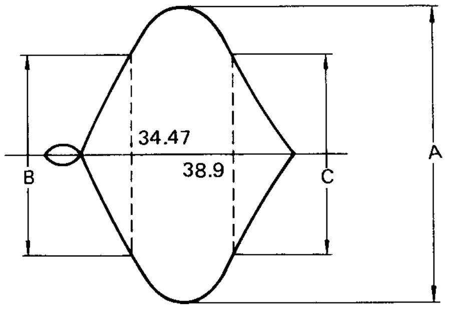


Fig. 55

3. AFT ADJUSTMENT

Connection

1) Connect the output of the 38.9 MHz oscillator to the IF input pins ② and ③ (GND) of the IF circuit via the coupling circuit shown in Fig. 56.
2) Connect the oscilloscope to the IFT output pins ⑨ and ⑩ of the IF circuit.

Mode

EE mode

Adjustment point

T803

Adjustment

1) Adjust the output of the 38.9 MHz oscillator so that the input level of the IF input pins ② and ③ is 90 dBμ.
2) Set the oscilloscope to the "DC" mode and adjust T803 so that the potential difference between the IFT output pins ⑨ and ⑩ is not present.

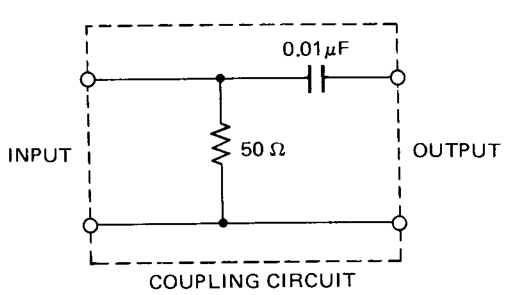


Fig. 56

4. SIF ADJUSTMENT

Connection

1) Connect a UHF or VHF antenna output to the VTR antenna input terminals.
2) Connect a TV set to the VTR.

Mode

EE mode

Adjustment point

T804

Adjustment

1) Select the channel with the best reception and adjust the set so that the station is tuned in properly.
2) Close the channel preset cover and set the AFS switch to ON.
3) Adjust T804 so that audio distortion is minimum and output is max.

5. PIF ADJUSTMENT

Connection

1) Connect the output of the TV signal generator to the VTR antenna input terminals and tune the set.
2) Connect the oscilloscope to the video output pin ④ of the IF circuit.

Mode

EE mode

Adjustment point

L001

Adjustment

1) Adjust L001 so that the characteristics shown in Fig. 57 can be obtained with sensitivity of the oscilloscope set to max, and output of the TV signal generator set to the min. required output.

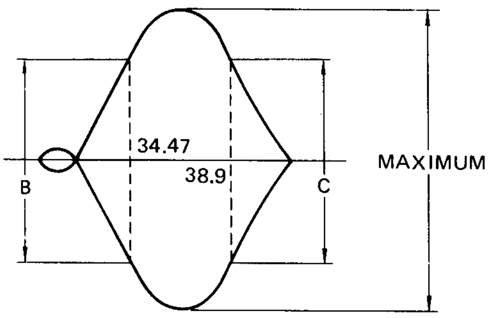


Fig. 57

6. VIDEO OUTPUT LEVEL ADJUSTMENT

Connection

1) Connect the output of the TV signal generator to the VTR antenna terminals, and tune the set.
2) Connect the oscilloscope to the video output pins ④ and ⑤ (GND) of the IF circuit.

Mode

EE mode

Adjustment point

VR802

Adjustment

1) Adjust the output of TV signal generator so that the output voltage at the test point terminal TP001 of the tuner is 80 dBμ.
2) Set the modulation signal of the TV signal generator to COLOR BAR with modulation 87.5%.
3) Adjust VR802 so that the output waveform of the oscilloscope is 0.95V± 0.03V.

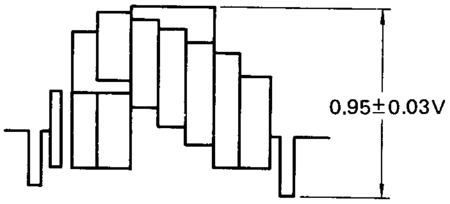


Fig. 58

7. AGC ADJUSTMENT

Connection

1) Connect the output of the signal generator to the VHF antenna terminals via the coupling circuit.
2) Connect the VTVM between pins ⑨ and ⑩ of IC801 in the IF circuit.

Mode

EE mode

Adjustment point

VR801

Adjustment

1) Set the output signal of the signal generator to 203.25 MHz, 69 dBμ. (75Ω open)
2) Set the tuning VR of the VTR so that the reading of the VTVM is 0V (potential difference between pin ⑨ and ⑩ of the IF circuit).
3) Close channel preset cover and set the AFS switch to ON.
4) Connect the VTVM to the AGC output pin ① in the IF circuit. Adjust VR401A so that the value at that time is 6.0±0.5V.

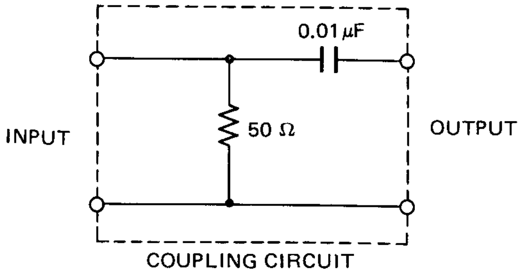


Fig. 59

8. MECHANISM ADJUSTMENT

8-1. INSPECTION AND ADJUSTMENT OF FRONT LOADING MECHANISM

When the cassette is not placed in the specified position for 6 sec or more due to too tight winding of the tape in the cassette, a faulty DOWN switch, faulty installation of the DOWN switch or abnormal front loading mechanism during cassette loading, the cassette is ejected automatically.
When the cassette is locked midway and the cassette is not loaded or ejected and is left in the VTR, all operation button inputs are disabled to prevent tape damage.
Pull out the power plug and check the front loading mechanism at that time.

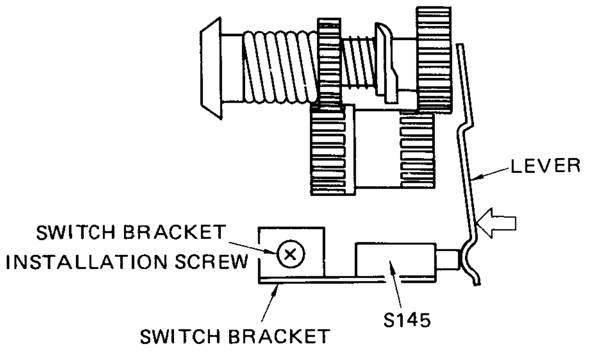

LEVER
SWITCH BRACKET INSTALLATION SCREW
SWITCH BRACKET
S145

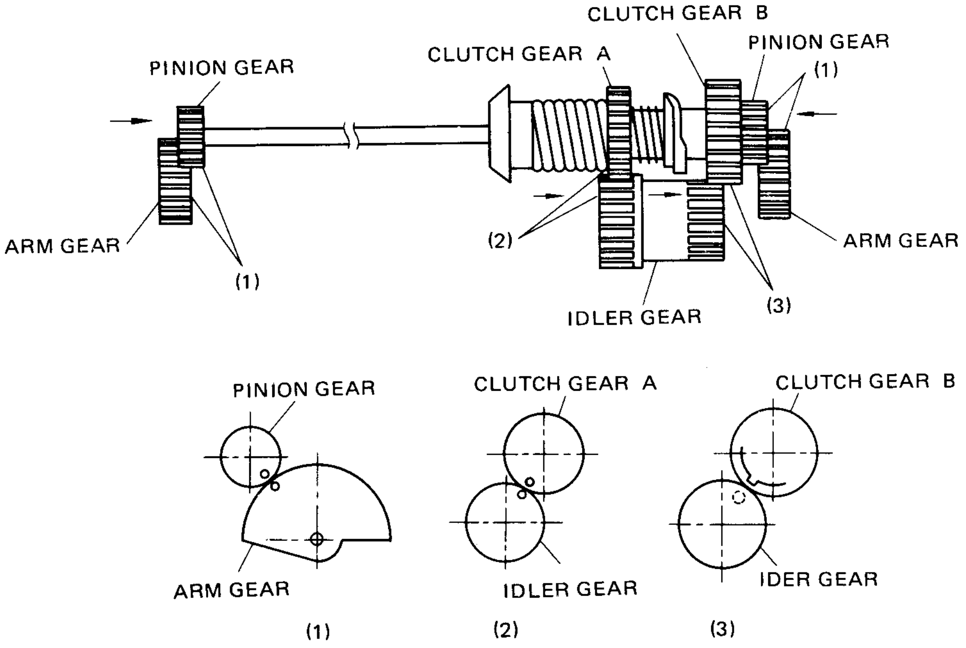
Fig. 60

1. Cassette loading switch installation adjustment

1) Remove the front panel and load the cassette.
2) Check that the switch knob is completely pushed when the lever is pressed in the direction of the arrow and that, on the other hand, the switch knob returns approx. 0.2 mm from the position when the lever is released, to check that the level shown in Fig. 60 is pressing the switch knob as much as required, after the cassette is loaded.
3) When the above value is not obtained, loosen the switch bracket installation screw shown in Fig. 60 to adjust the switch bracket installation.
4) Tighten the switch bracket installation screw after adjustment.

2. Checking the engagement of gears in the front loading mechanism

When the 4 engagements shown in Fig. 61 do not match when the cassette is loaded, the front loading mechanism does not operate normally, so check the engagement while removing these parts or when the front loading mechanism operation is faulty.


CLUTCH GEAR B
PINION GEAR
CLUTCH GEAR A
PINION GEAR
(1)
ARM GEAR
(2)
ARM GEAR
(1)
IDLER GEAR
(3)
PINION GEAR
CLUTCH GEAR A
CLUTCH GEAR B
ARM GEAR
IDLER GEAR
IDER GEAR
(1)
(2)
(3)

* (1)~(3) shows the position relation viewed from the direction of the arrow.

Fig. 61

8-2. ADJUSTING MECHANISM STATE SWITCH INSTALLATION POSITION

The mechanism state switch is installed at the position near the supply reel at the bottom of the chassis. Adjust the installation position of the mechanism state switch according to the procedure shown below when the mechanism state switch is replaced.

1) Turn the pulley installed to the shaft of the worm gear in the loading mechanism shown in Fig. 62-1 by hand in the unloading direction (counterclockwise Ⓐ) until it stops.
2) Loosen the mechanism state switch fixing screw Ⓑ and match the top of the triangular hole in the knob of the mechanism state switch shown in Fig. 62-2 with the top of the triangle of the "STOP" position engraved on the body of the mechanism state switch.
3) Tighten the mechanism state switch fixing screw Ⓑ and then load a blank tape and set the Stop ←→ F. FWD/Rewind ←→ REC/PLAY ←→ REC-PAUSE ←→ PLAY ←→ Reverse visual search modes, to check that the mechanism operates normally. When the operation in any mode is faulty, readjust the mechanism state switch installation position.

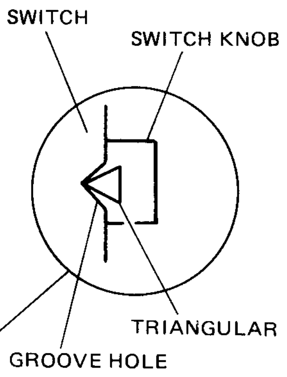


Fig. 62-2

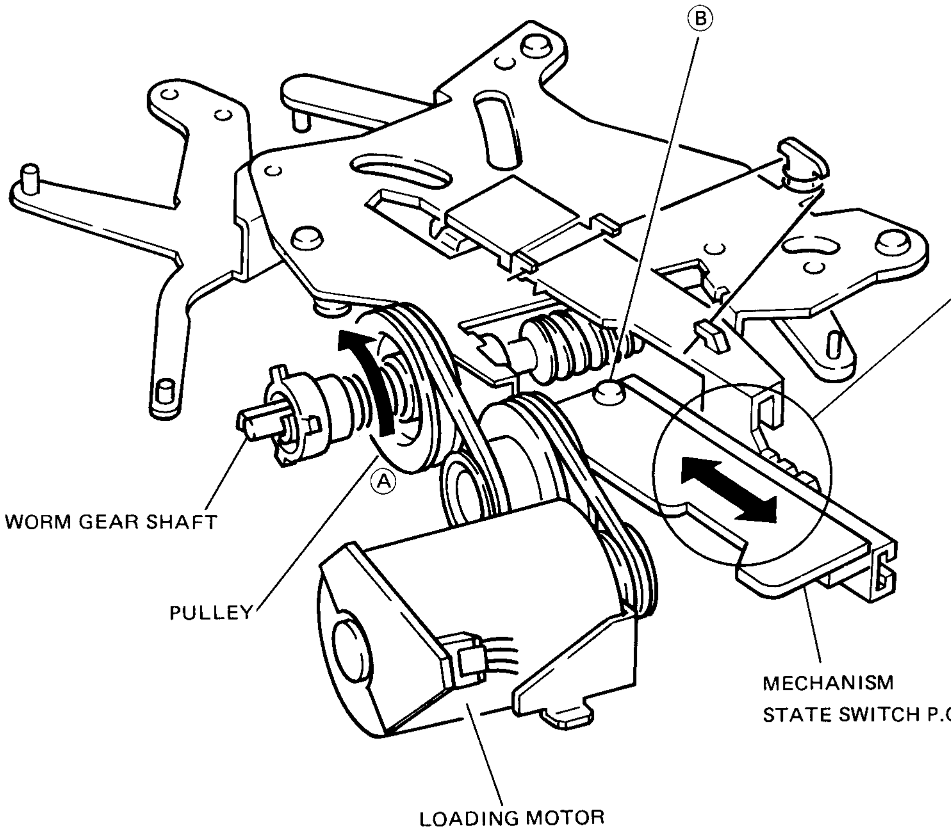


Fig. 62-1

8-3. TRANSPORT SYSTEM ADJUSTMENT

The adjustment items shown below are related to the tape transport system.

(1) Reel disk height adjustment
(2) Tension pole adjustment
(3) Guide pole height adjustment
(4) AC head height/azimuth/tilt adjustment
(5) Guide roller height adjustment

With the tape transport system, it is basically most important that the route from the supply reel disk to the take-up reel disk shown in Fig. 63 is clean without creases and is stable. The tape transport system is adjusted precisely in the factory while paying utmost attention. When parts related to the tape transport system are replaced, the tape transport should be kept stable by adjusting only the replaced parts. When the adjustment of the parts is not done or parts other than those replaced are moved, the adjustment of the parts concerning the tape transport system may get out of order and result in unsatisfactory operation.

Do not loosen the fixing screws for the parts shown below. When parts are to be replaced due to breakage, etc., be sure to install the new parts to the same positions where the replaced parts were installed before, and then perform the precise adjustment described in the item "Guide roller height adjustment".

(1) Catcher on the supply or take-up side.
(2) Inclined guide on the supply or take-up side.

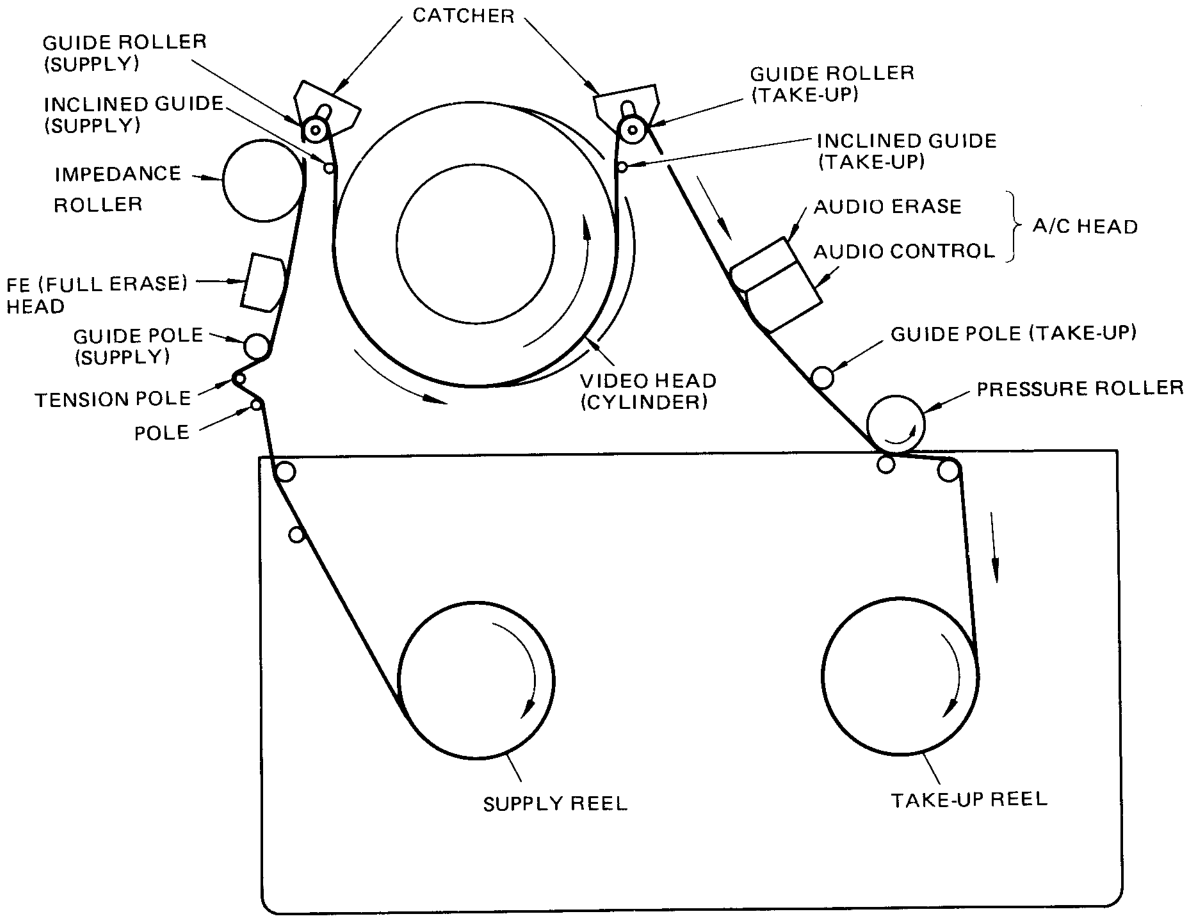

CATCHER
GUIDE ROLLER (SUPPLY)
INCLINED GUIDE (SUPPLY)
IMPEDANCE ROLLER
FE (FULL ERASE) HEAD
GUIDE POLE (SUPPLY)
TENSION POLE
POLE
GUIDE ROLLER (TAKE-UP)
INCLINED GUIDE (TAKE-UP)
AUDIO ERASE
AUDIO CONTROL
A/C HEAD
GUIDE POLE (TAKE-UP)
PRESSURE ROLLER
VIDEO HEAD (CYLINDER)
SUPPLY REEL
TAKE-UP REEL

Fig. 63

(1) REEL DISK HEIGHT ADJUSTMENT

Jigs required for adjustment
Master plane, reel height adjusting jig

Adjustment procedure

1) Remove the top panel and cassette holder.
2) Mount the master plane, place the reel height adjusting jig on the master plane as shown in Fig. 64, and check whether or not the reel disk enters between side A and side B of the reel height adjusting jig. When the reel disk does not enter between side A and side B, adjust the quantity of spacers (2 types: 0.25 mm and 0.5 mm) inserted between the reel disk and the base of the reel disk.

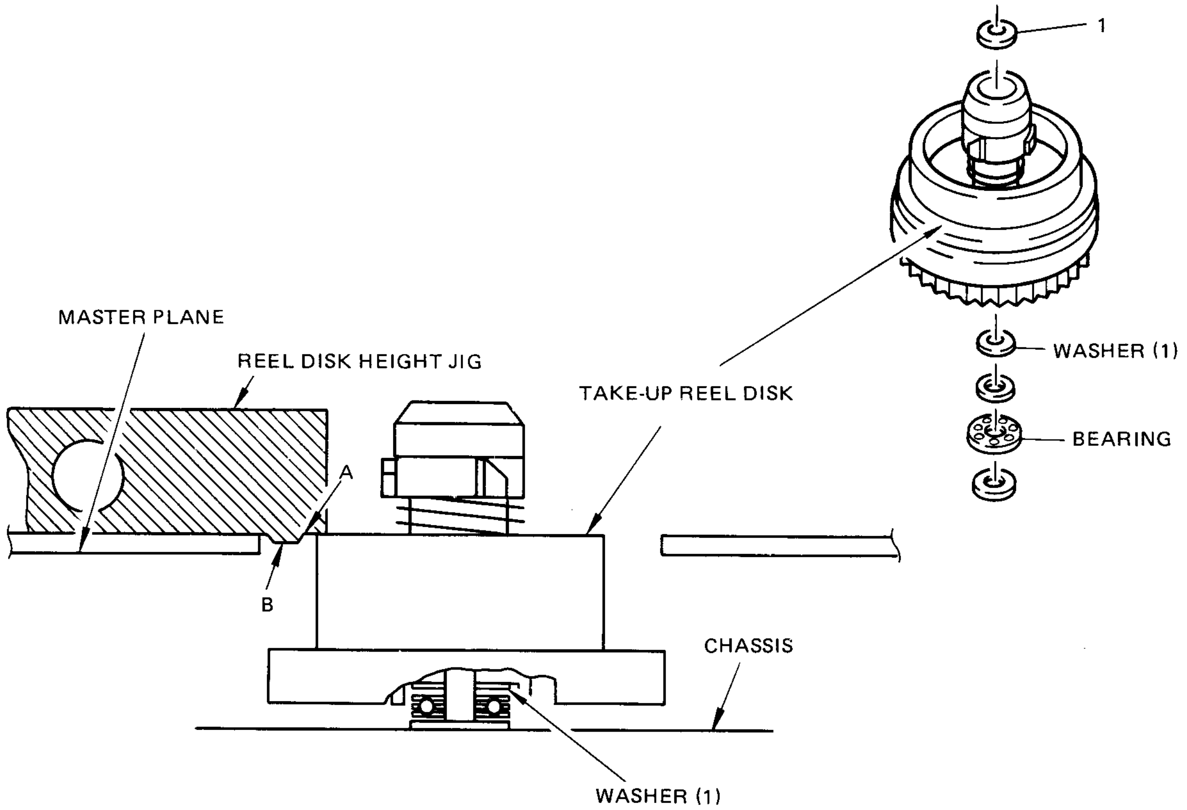

1
MASTER PLANE
REEL DISK HEIGHT JIG
TAKE-UP REEL DISK
WASHER (1)
BEARING
A
B
CHASSIS
WASHER (1)

Fig. 64

(2) TENSION POLE ADJUSTMENT

Jigs required for adjustment

Back tension meter

Adjustment procedure

Perform this adjustment after removing the cassette panel to set the VTR horizontal.

1) Remove the cassette panel.
   Note: Remove the top panel, cassette holder and tension band when replacing the tension arm.
2) Shut off the supply end sensor (no light can be received), and set the VTR to the play mode without loading a tape. Check that the gap between the tension pole and chassis shown in Fig. 65-2 is 1.5 mm ± 0.5 mm at that time. When it is not, loosen the tension band fixing screw, insert the tip of a (–) screwdriver into the groove in the loading motor holder and the groove in the tension band bracket shown in Fig. 65-3 to move the tension band bracket by turning the screwdriver. Tighten the tension band fixing screw and apply locking paint after adjustment is completed.
3) Mount the back tension meter and set the VTR to the play mode. Check that the reading of the back tension meter is 35 ± 8 g.cm at that time. If not, loosen the spring hanger fixing screw shown in Fig. 65-1, insert the tip of the (–) screwdriver into the groove in the chassis and the groove in the spring hanger, and move the tension hanger installation position while turning the screwdriver to adjust that the back tension is 35 ± 2g.cm. Tighten the tension hanger fixing screw and apply locking paint after adjustment is completed.
   Note: The back tension values are different between during confirmation and adjustment.

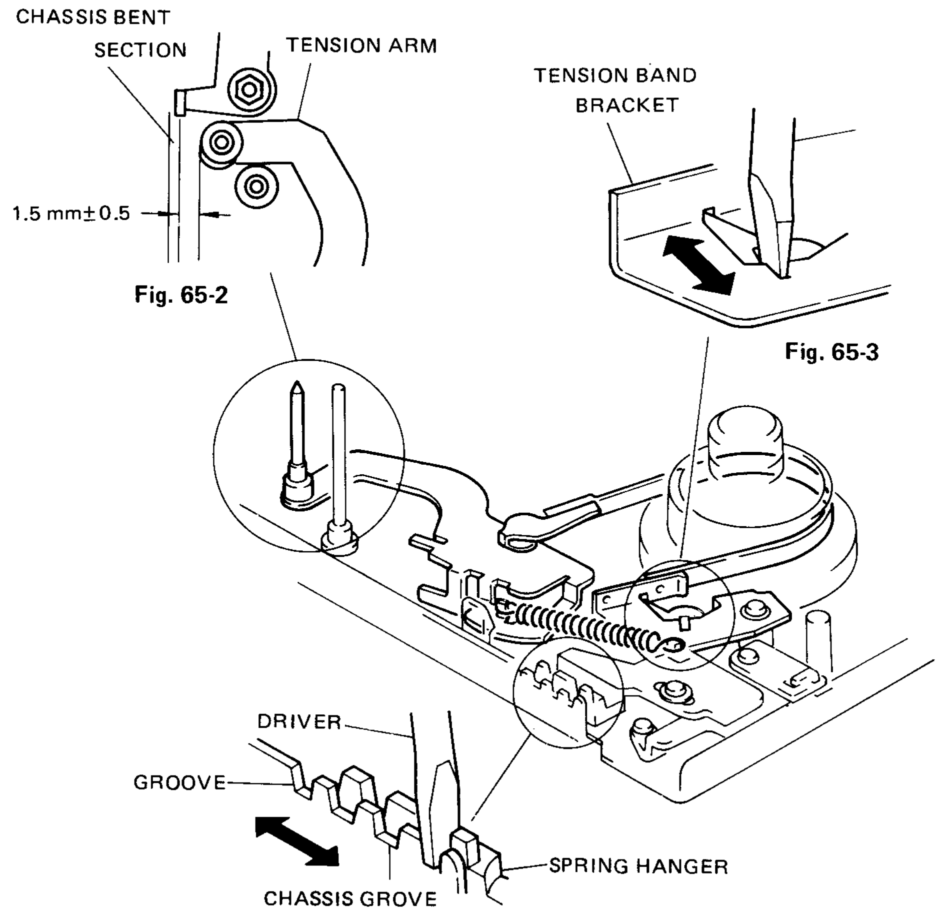


Fig. 65-2

Fig. 65-3

Fig. 65-1

(3) GUIDE POLE HEIGHT ADJUSTMENT

Jigs required for adjustment
Master plane, reel height adjusting jig, blank tape
Adjustment procedure
Guide pole height adjustment: Perform rough adjustment using the master plane and reel height adjusting jig first, and then run a blank tape to adjust the height precisely.

1) Remove the top panel and cassette holder.
2) Mount the master plane and place the reel height adjusting jig on the master plane shown in Fig. 66.
   Then, roughly adjust the guide pole height adjusting nut so that the gap between the flange of the guide pole and the reel height adjusting jig is within 0 - 0.2 mm when side C of the jig is applied to the guide pole.
3) Install the cassette holder, load a blank tape and play it back. Check that the tape does not ride over the flange of the guide pole and runs stably at that time. When the tape rides over the flange of the guide pole, fine-adjust the guide pole height.
4) Tighten the adjusting nut and apply locking paint after adjustment is completed.

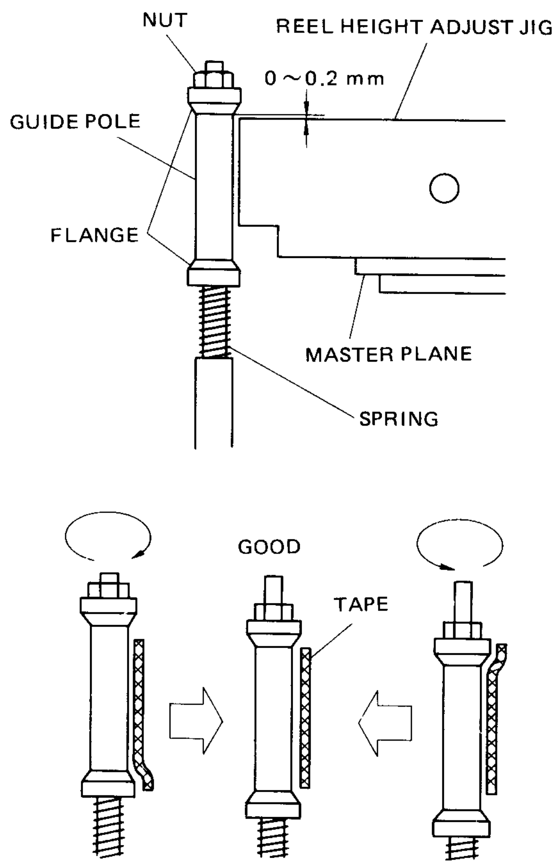


Fig. 66

(4) AC HEAD ADJUSTMENT

The AC head adjustment consists of the audio play output/recording bias level adjustment described in the "Circuit adjustment" as well as the height/azimuth/tilt adjustment described in the following. Perform all these adjustments when the AC head is replaced. The adjustment details below show the adjustment procedure when the AC head is replaced; be sure to perform precise adjustment after rough adjustment.

AC HEAD ROUGH ADJUSTMENT

Jigs required for adjustment

Master plane, reel height adjusting jig, blank tape

Adjustment procedure

1) Tighten screw (35) shown in Fig. 67-2 through the bottom of the head base (2) via the spring so that it projects approx. 1 mm above the top of the AC head base (1).
2) Roughly adjust tilt adjusting screw (37) shown in Fig. 67-2 and azimuth adjusting screw (36) so that the gap between the AC head base (1) and head base (2) is approx. 2.3 mm, and the AC head base (1) and head base (2) are parallel.
3) Remove the cassette holder and mount the master plane.
4) Place the reel height adjusting jig on the master plane as shown in Fig. 68. Then roughly adjust the AC head height adjusting nut so that the gap between the reel height adjusting jig and the shield case of the AC head is approx. 0.5 mm when the side C of jig is applied to the AC head.
5) Install the cassette holder, load a blank tape and set the VTR to the play mode. Check that there is no conspicuous curling or protruding around the AC head at that time. The ideal AC head height is with the bottom of the tape approx. shown Fig. 69, 0.3 mm from the bottom of the core of the CTL head. Roughly adjust the tilt adjusting screw, azimuth adjusting screw and AC head height adjusting nut when conspicuous curling or protruding occurs.
6) Perform precise adjustment
7) Perform the guide roller height adjustment.

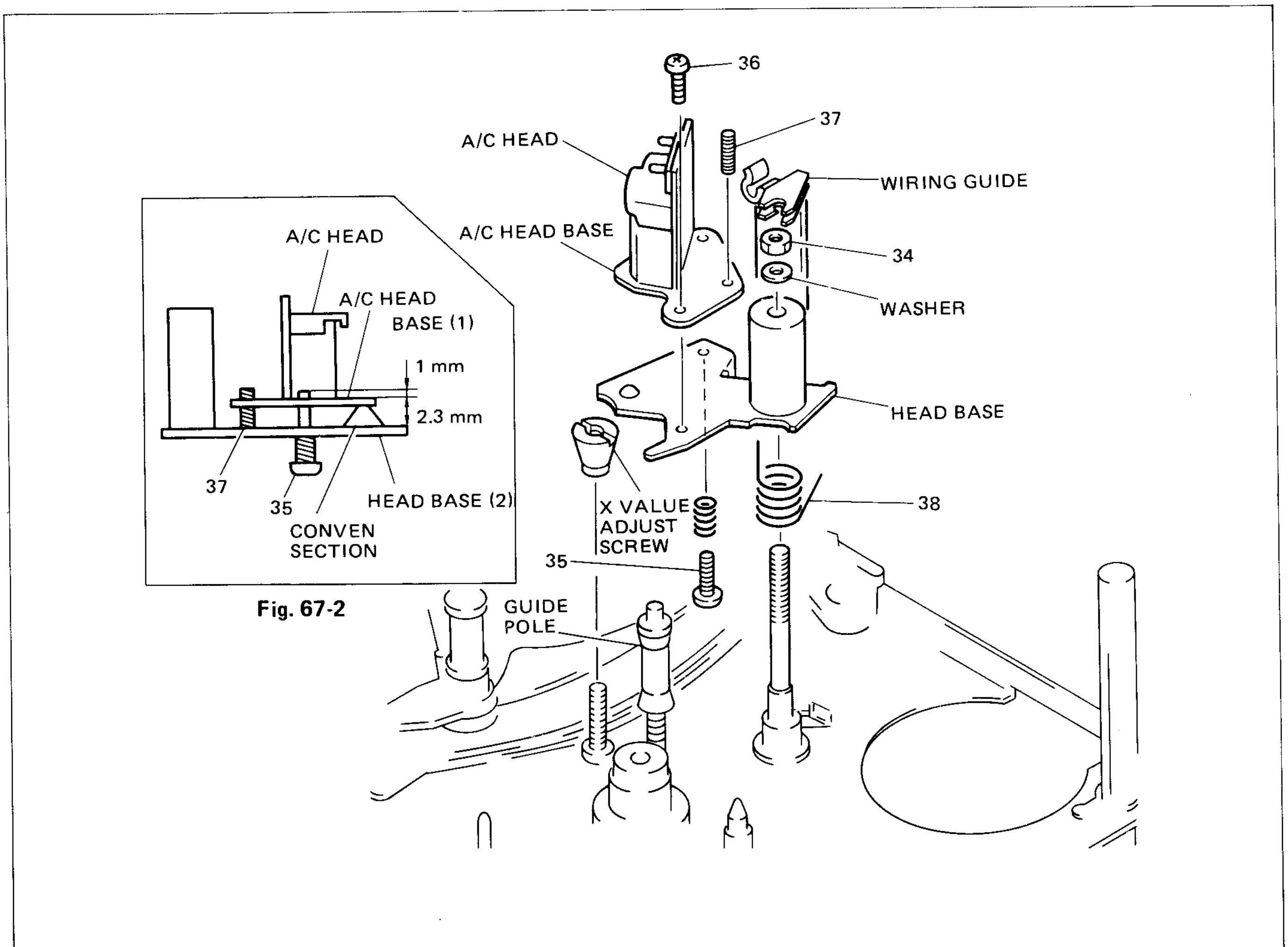


Fig. 67-2

Fig. 67-1

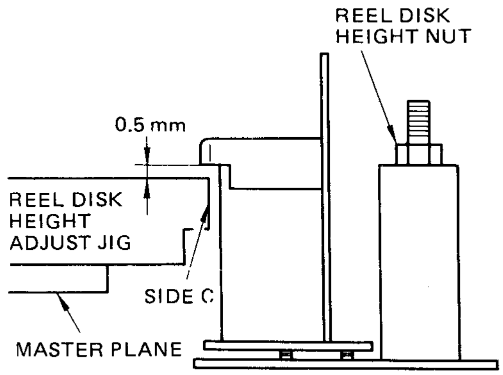

REEL DISK
HEIGHT NUT
0.5 mm
REEL DISK
HEIGHT
ADJUST JIG
SIDE C
MASTER PLANE

Fig. 68

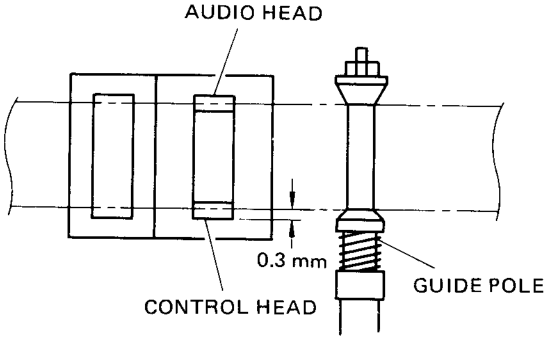

AUDIO HEAD
0.3 mm
GUIDE POLE
CONTROL HEAD

Fig. 69

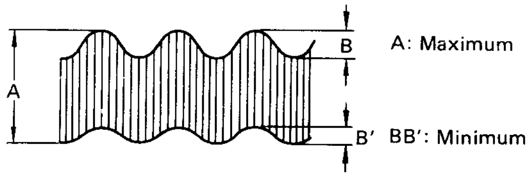


Fig. 70

AC HEAD PRECISE ADJUSTMENT

Jig required for adjustment

Alignment tape

Adjustment procedure

1) Connect an oscilloscope to the "AUDIO OUT" jack on the rear panel of the VTR.
2) Play back the audio 7 kHz section of the alignment tape. Adjust the tilt adjusting screw, azimuth adjusting screw and AC head height adjusting nut alternately so that the audio output is max., the envelope is flat and stable as shown in Fig. 70.
3) Connect the oscilloscope to the FM output pin (TP202).
4) Check that the FM output is maximum at the click point of the tracking control and the FM output starts dropping at the same angle to the left and right when the control is turned left and right from the click point while playing the alignment tape. When the FM output level does not start dropping at the same angle to the left and right, set the tracking control to the "click" point and adjust the X value adjusting screw shown in Fig. 68. (When the control is turned clockwise and the FM signal output starts dropping earlier that when turned counterclockwise, turn the X value adjusting screw clockwise.)
5) Check item 4 again.
6) Apply locking paint to the tilt adjusting screw, azimuth adjusting screw, AC head height adjusting nut and X value adjusting screw.
7) Adjust the play output and recording bias level as described in "Circuit adjustment".

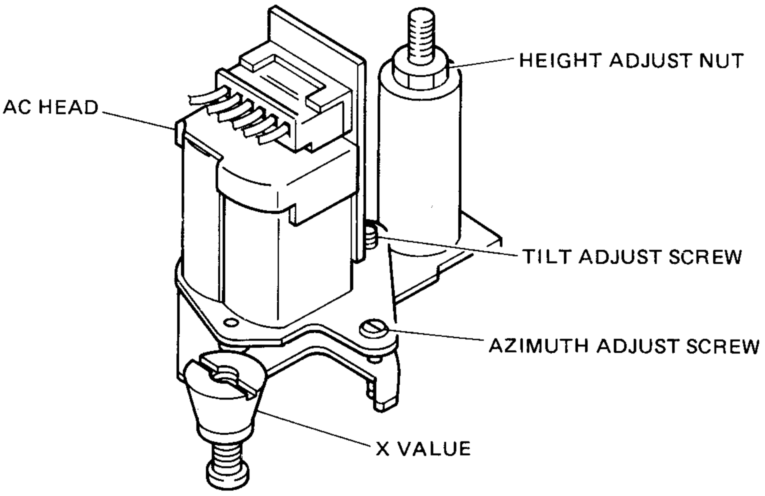

HEIGHT ADJUST NUT
AC HEAD
TILT ADJUST SCREW
AZIMUTH ADJUST SCREW
X VALUE

Fig. 71

(5) GUIDE ROLLER HEIGHT ADJUSTMENT

Jig required for adjustment

Alignment tape, hexagonal wrench

Adjustment procedure

1) Remove the top panel and shield cover, and play back a blank tape. Check that conspicuous curling, protruding or lifting does not occur around the tape guide of the lower cylinder at that time. When any curling, protruding or lifting occurs, set the VTR to the stop mode after checking the back tension, and then loosen the guide roller fixing screw shwon in Fig. 72 to set the VTR to the play mode again, and roughly adjust the guide roller height.
2) Connect the oscilloscope to the FM output terminal TP202.
3) Play back the alignment tape and adjust the tracking VR at the front of the VTR so that the FM signal output is max. Turn the tracking VR in either direction so that the FM signal output is 75% of the max. value, after adjustment is completed.
4) Check the FM signal envelope; conspicuous fluctuations should not be present and the ratio between the max. section and min. section (this is called "flatness"), 57% or more. When the FM signal waveform is as shown in Fig. 73 and below the specifications shown above, adjust the supply guide roller. On the other hand when the waveform is as shown in Fig. 74 and over the specifications shown above, adjust the take-up guide roller. Do not turn the guide roller more than 1 turn, at that time.
5) Load a blank tape, and record the color bar signal or a TV program for 2 - 3 minutes in the "SP" speed mode.
6) Play back the section recorded in item 5). Check that the FM signal envelope is within the specifications described in item 4).
7) Tighten the guide roller fixing screw after adjustment is completed.

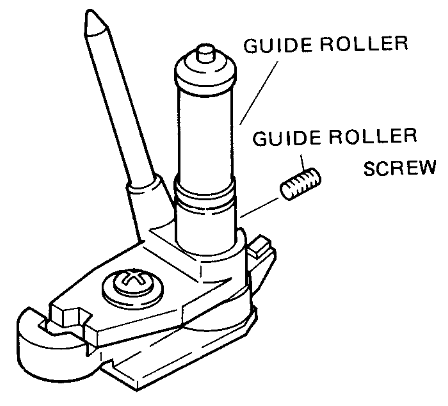


Fig. 72

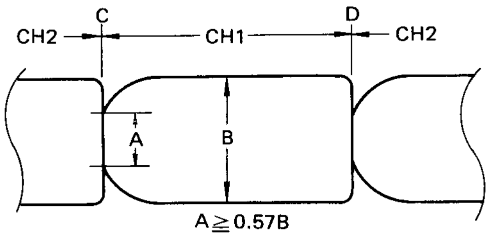


Fig. 73

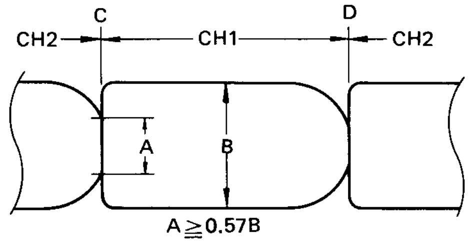


Fig. 74

8-4. COMPRESSION STRENGTH AND TORQUE

Item	VTR operation mode	Measured reel	Measurement value	Remarks
Pressure roller compression strength	PLAY-PAUSE	————	1.2 ± 0.2 kg	Note 1 (Fig. 75)
Main brake torque	STOP	Supply & take-up reels	170g.cm or more	Note 2
Slack removal torque	Unloading	Supply reel	90 ~ 190g.cm	Note 2
F. FWD torque	Fast-forward	Take-up reel	400g.cm or more	Note 2
Rewind torque	Rewind	Supply reel	400g.cm or more	Note 2
Take-up torque	Play	Take-up reel	90 ~ 180g.cm	Note 2
Back tension torque	F. FWD	Supply reel	4 ~ 15g.cm	Note 3
	Rewind	Take-up reel		

Note 1

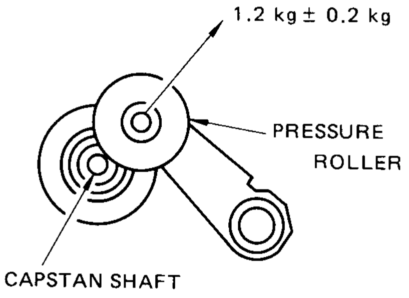

1.2 kg ± 0.2 kg
PRESSURE ROLLER
CAPSTAN SHAFT

Fig. 75

Note 2: The value measured while sliding the torque gauge at the speed of 0.8 rps using the torque gauge and the torque gauge adaptor.
However, the main brake torque shows the value when measured while turning the take-up reel clockwise and the supply reel, counterclockwise by hand at the speed of 0.8 rps.

Note 3: The value measured while drawing the take-up reel disk counterclockwise and the supply reel disk counterclockwise and the supply reel disk, clockwise at the speed of 50 mm/s using the dummy reel and fan type tension gauge.

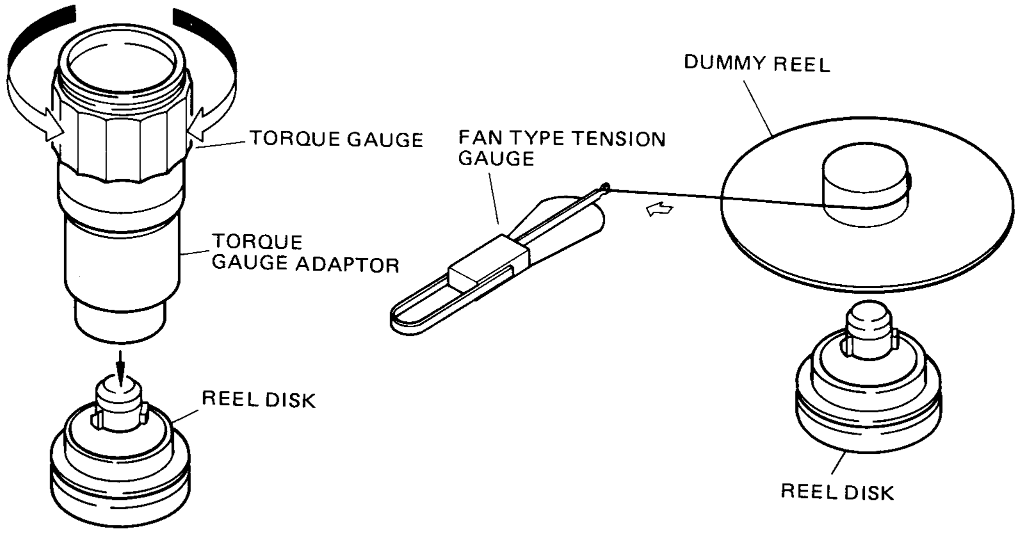
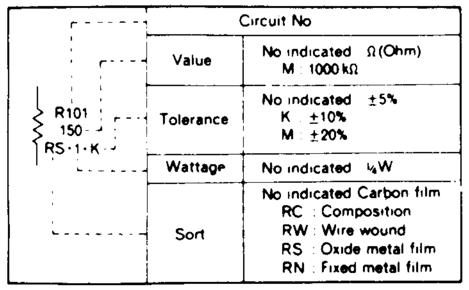

TORQUE GAUGE
TORQUE GAUGE ADAPTOR
REEL DISK
FAN TYPE TENSION GAUGE
DUMMY REEL
REEL DISK

Fig. 76

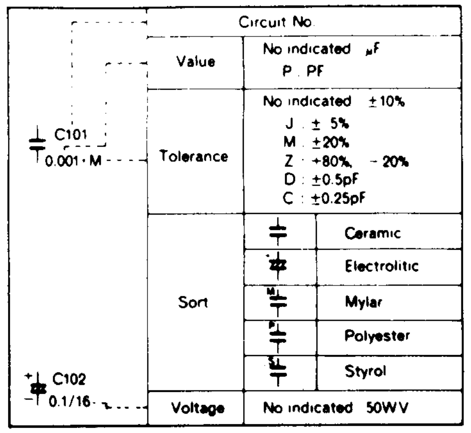
SCHEMATIC/CIRCUIT BOARD DIAGRAMS

Note

1. Voltage measured at base of chassis with minimum volume control and no signal
   (   ) are shown in recording condition
2. Nomenclature of Resistors and Capacitors



Circuit No	
Value	No indicated Ω(Ohm) M : 1000 kΩ
Tolerance	No indicated ±5% K : ±10% M : ±20%
Wattage	No indicated ¼W
Sort	No indicated Carbon film RC : Composition RW : Wire wound RS : Oxide metal film RN : Fixed metal film



Circuit No	
Value	No indicated μF P : PF
Tolerance	No indicated ±10% J : ± 5% M : ±20% Z : +80%, −20% D : ±0.5pF C : ±0.25pF
Sort	Ceramic Electrolitic Mylar Polyester Styrol
Voltage	No indicated 50WV

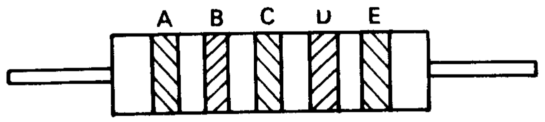
3. Be sure to make your orders of resistors and capacitors with value, voltage, tolerance and sort
4. When replacing capacitors marked with *, use specified ones stated on parts list since required temperature characteristics

Cautions on use of MOS IC

1. The MOS IC is inserted in black foam for shipment. This foam is a conductor which short-circuits between the leads to prevent damage. Do not remove ICs from this foam during their storage. Avoid removing ICs from this foam, placing them on plastic which is likely to be charged with static electricity or inserting them into styrol foam.
2. High voltages may be applied during soldering caused by leakages from the soldering iron, so be sure to ground the tip of the soldering iron or use a low voltage soldering iron.
3. The human body, clothes made of synthetic fibres or nylon gloves may be charged with several thousands volts of static electricity because of friction, so a workers should be grounded.
4. Be sure to ground measuring instruments such as oscilloscopes, VTVMs, etc. used for repairs.

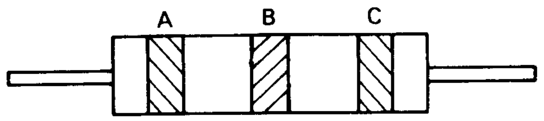
HOW TO READ CAPACITY AND INDUCTANCE OF RESISTOR SHAPE CAPACITORS AND COILS

CAPACITOR



CAPACITY: A × B × C [PF]
TOLERANCE: D
RATED VOLTAGE: BODY COLOR
Pink: 25V
Green: 50V
CHARACTERISTICS: E

COIL

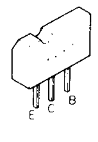
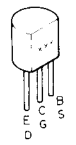
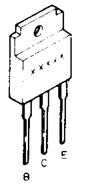
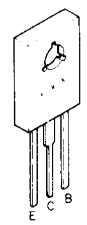


INDUCTANCE: A × B × C [μH]

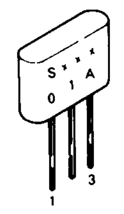
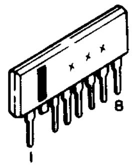
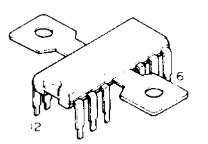
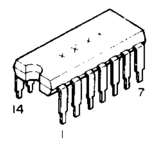
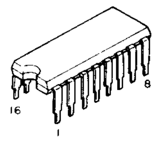
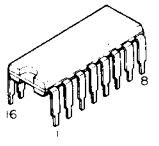
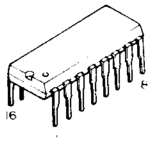
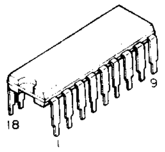
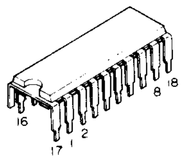
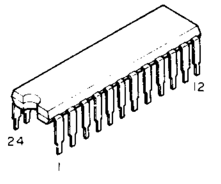
COLOR	A, B	C	D	E
Black	0	10^0	±20%	For temperature compensation
Brown	1	10^1		
Red	2	10^2		
Orange	3	10^3		
Yellow	4	10^4		
Green	5	10^5		
Blue	6			
Violet	7			
Grey	8		±30%	High dielectric constant type
White	9			For temperature compensation
Gold		10^{-1}	±5±	
Silver		10^{-2}	±10%	High dielectric constant type

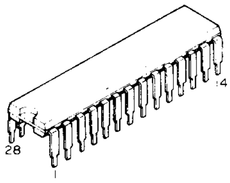
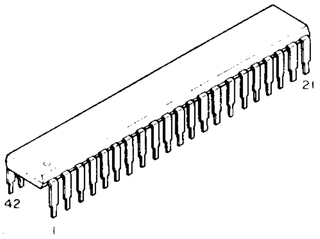
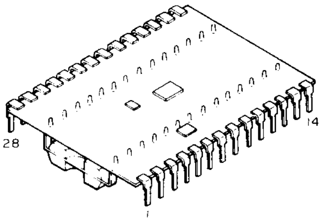
SEMICONDUCTOR CONFIGURATION

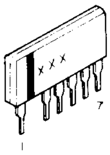
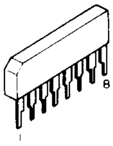
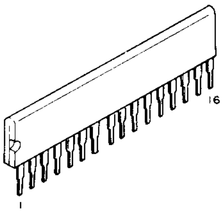
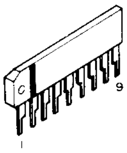
TRANSISTOR

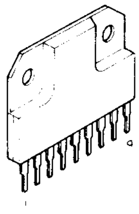
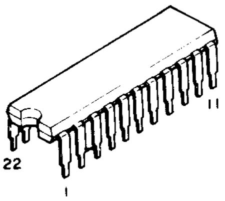
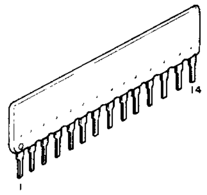
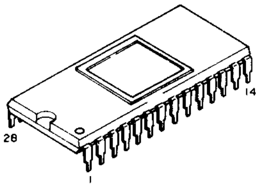
1	2	3	4
			
2SC2021	2SA673 2SA844 2SA952 2SA1198 2SC1213 2SA934 2SC2320	2SD1276	2SD882

IC

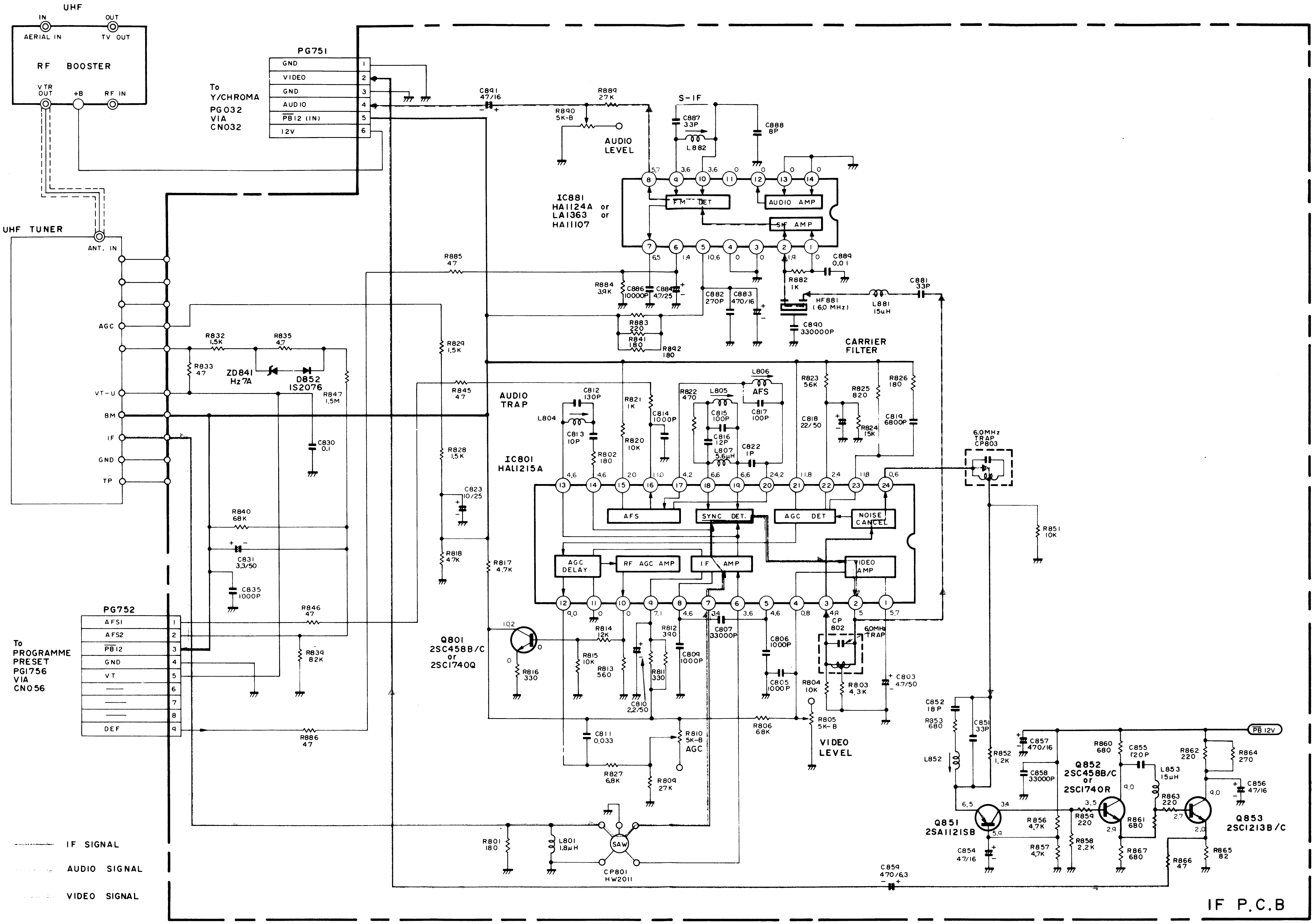
5	6	7	8	9
				
DN6838	M5218L	HA13402	μPD4013C μPD4066 BA6304 μPD4069C μPD4081	TA7629
10	11	12	13	14
				
BA7100	HA11750	M50127AP	HA11749	μPD4514BC

15	16	17
		
HA11747 HD38757A11 HD38702A25	HD38800B03 HD38800B12 M58839-6069	HT42XX

18	19	20	21
			
HA1406	LA7016 μPC1373H	BA7026L	NJD6506

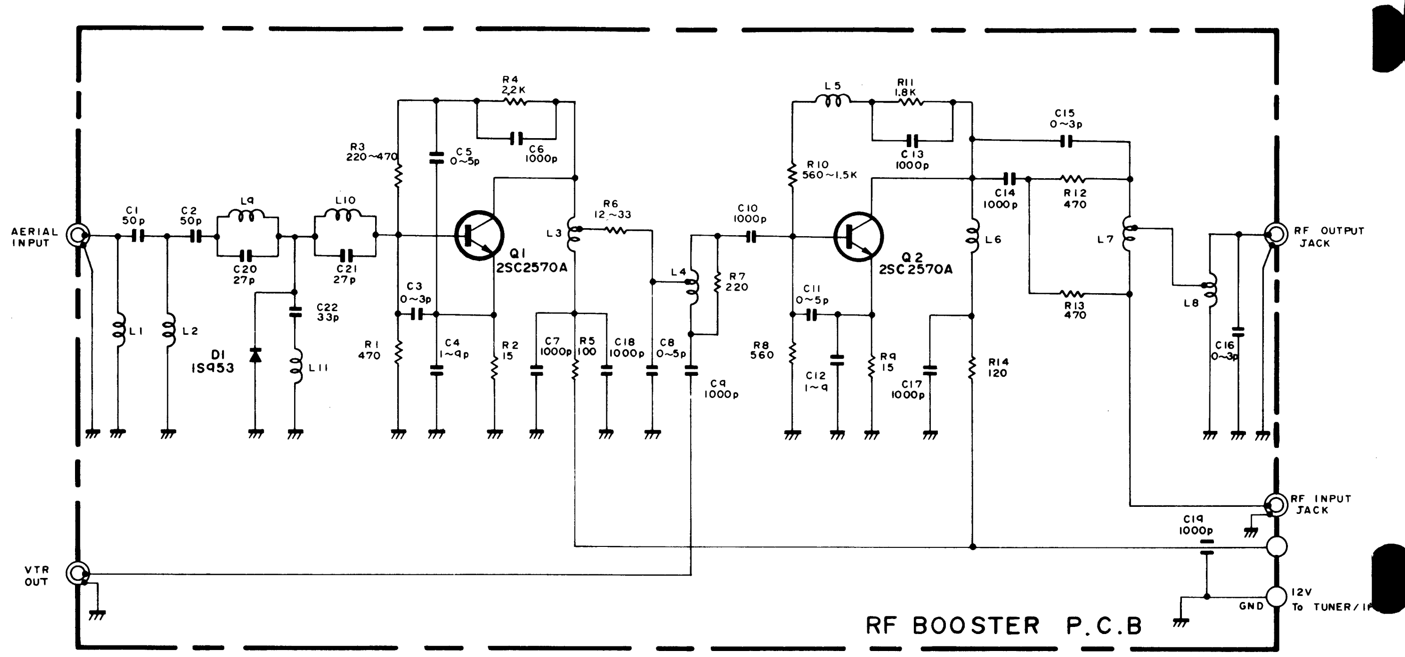
22	23	24	25
			
M54543L	BA7022	EXB-341	μPC1363C

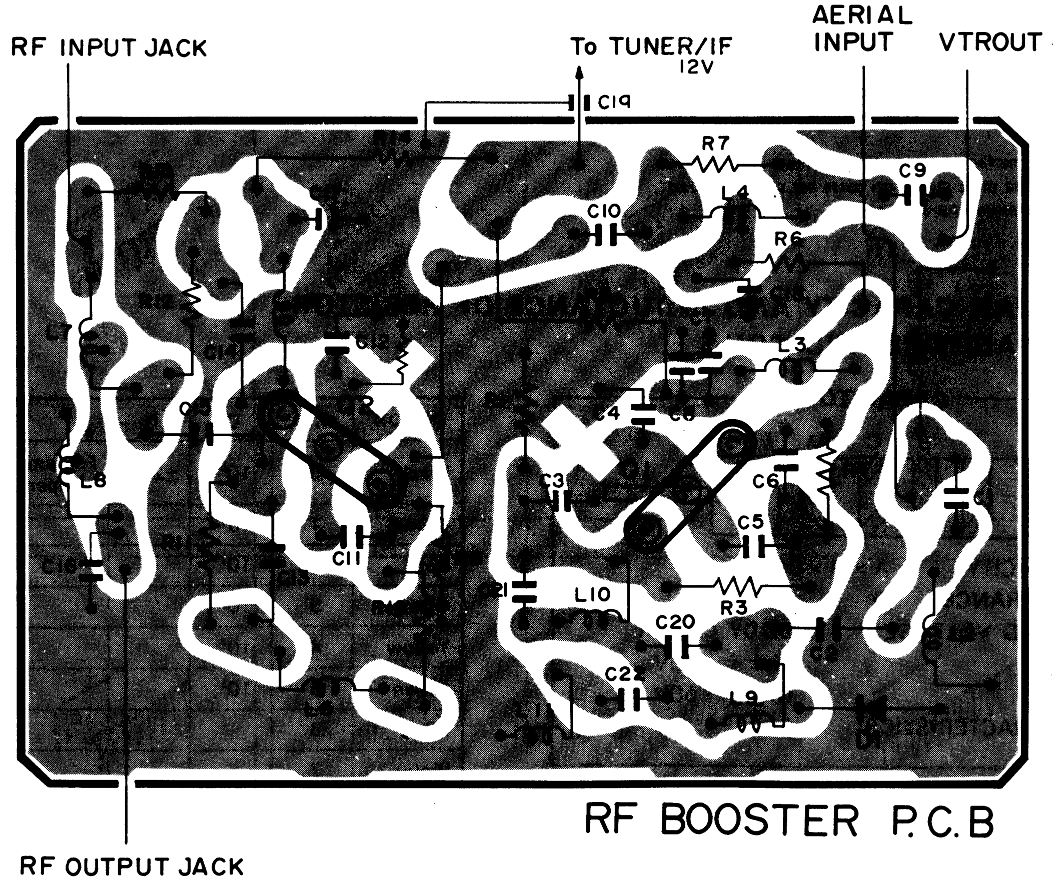
TUNER IF [For UK model]



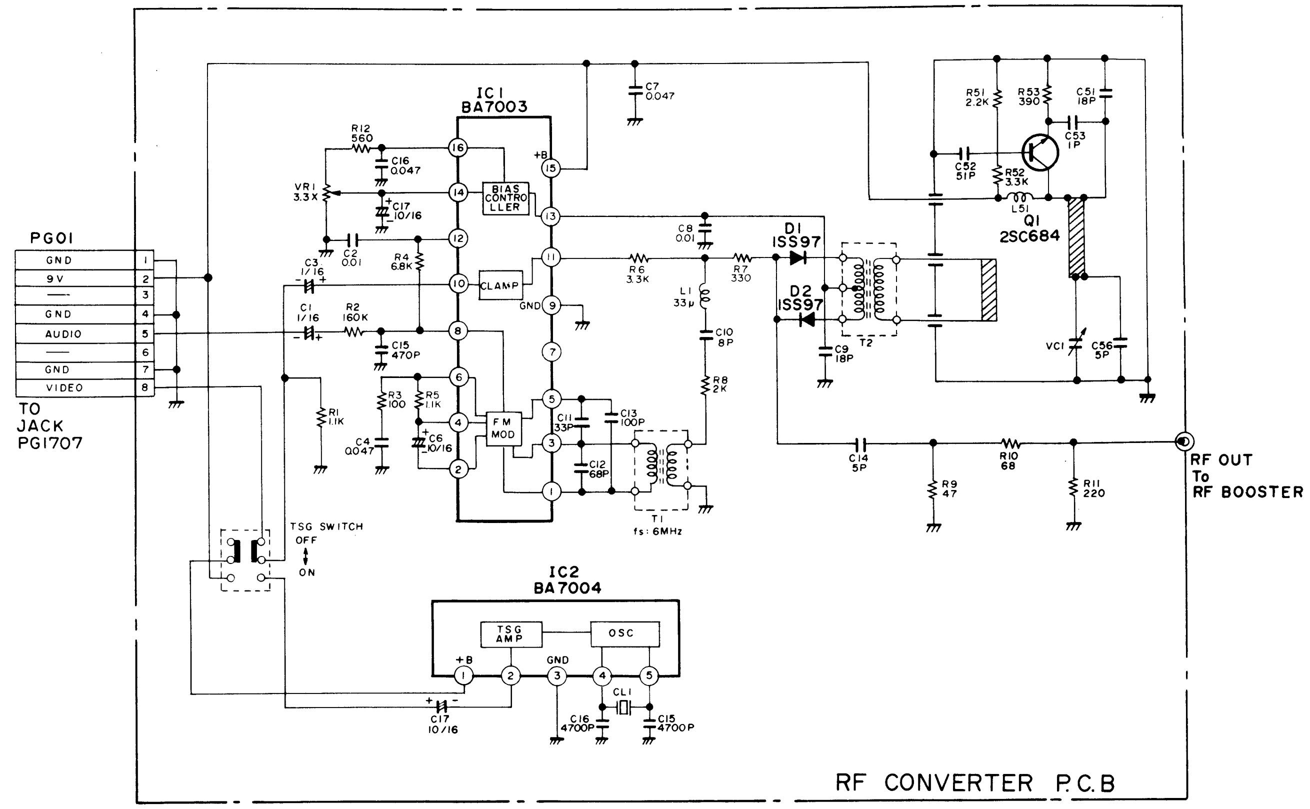
UHF
IN
OUT
AERIAL IN
TV OUT
RF BOOSTER
VTR OUT
+B
RF IN
UHF TUNER
ANT. IN
AGC
VT-U
BM
IF
GND
TP
PG751
GND
VIDEO
GND
AUDIO
PB12 (IN)
12V
To Y/CHROMA PG032 VIA CN032
C891 47/16
R889 27K
R890 5K-B
AUDIO LEVEL
S-IF
C887 33P
L882
C888 8P
IC881 HA1124A or LA1363 or HA1107
FM DET
AUDIO AMP
SIF AMP
C889 0.01
R882 1K
HF881 (6.0 MHz)
L881 15uH
C881 33P
C890 330000P
CARRIER FILTER
R885 47
R884 3.9K
C886 10000P
C884 4.7/25
C882 270P
C883 470/16
R883 220
R841 180
R842 180
R832 1.5K
R835 47
R833 47
ZD841 Hz7A
D852 1S2076
R847 1.5M
R829 1.5K
R845 47
AUDIO TRAP
C812 130P
L804
C813 10P
R802 180
R821 1K
R820 10K
C814 1000P
R822 470
L805
C815 100P
C816 12P
L807 5.6uH
L806
AFS
C817 100P
C822 1P
R823 56K
C818 22/50
R825 820
R824 15K
R826 180
C819 6800P
6.0MHz TRAP CP803
IC801 HA1215A
AFS
SYNC DET.
AGC DET
NOISE CANCEL
AGC DELAY
RF AGC AMP
IF AMP
VIDEO AMP
C830 0.1
R828 1.5K
C823 10/25
R818 4.7K
R817 4.7K
R840 68K
C831 3.3/50
C835 1000P
R846 47
R839 82K
R851 10K
PG752
AFS1
AFS2
PB12
GND
VT
DEF
To PROGRAMME PRESET PG1756 VIA CN056
R886 47
Q801 2SC458B/C or 2SC1740Q
R816 330
R814 12K
R815 10K
R813 560
C810 2.2/50
R812 390
R811 330
C809 1000P
C807 33000P
C806 1000P
C805 1000P
CP 802
6.0MHz TRAP
R804 10K
R803 4.3K
C803 4.7/50
R806 68K
R805 5K-B
VIDEO LEVEL
C811 0.033
R810 5K-B AGC
R827 6.8K
R809 27K
R801 180
L801 1.8uH
SAW
CP801 HW2011
C852 18P
R853 680
C851 33P
L852
R852 1.2K
C857 470/16
C858 33000P
R860 680
C855 120P
Q852 2SC458B/C or 2SC1740R
L853 15uH
R862 220
R864 270
C856 47/16
R863 220
Q851 2SA1121SB
R856 4.7K
R859 220
R861 680
Q853 2SC1213B/C
C854 47/16
R857 4.7K
R858 2.2K
R867 680
R866 47
R865 82
C859 470/6.3
PB 12V
IF SIGNAL
AUDIO SIGNAL
VIDEO SIGNAL
IF P.C.B

RF BOOSTER [For UK model]

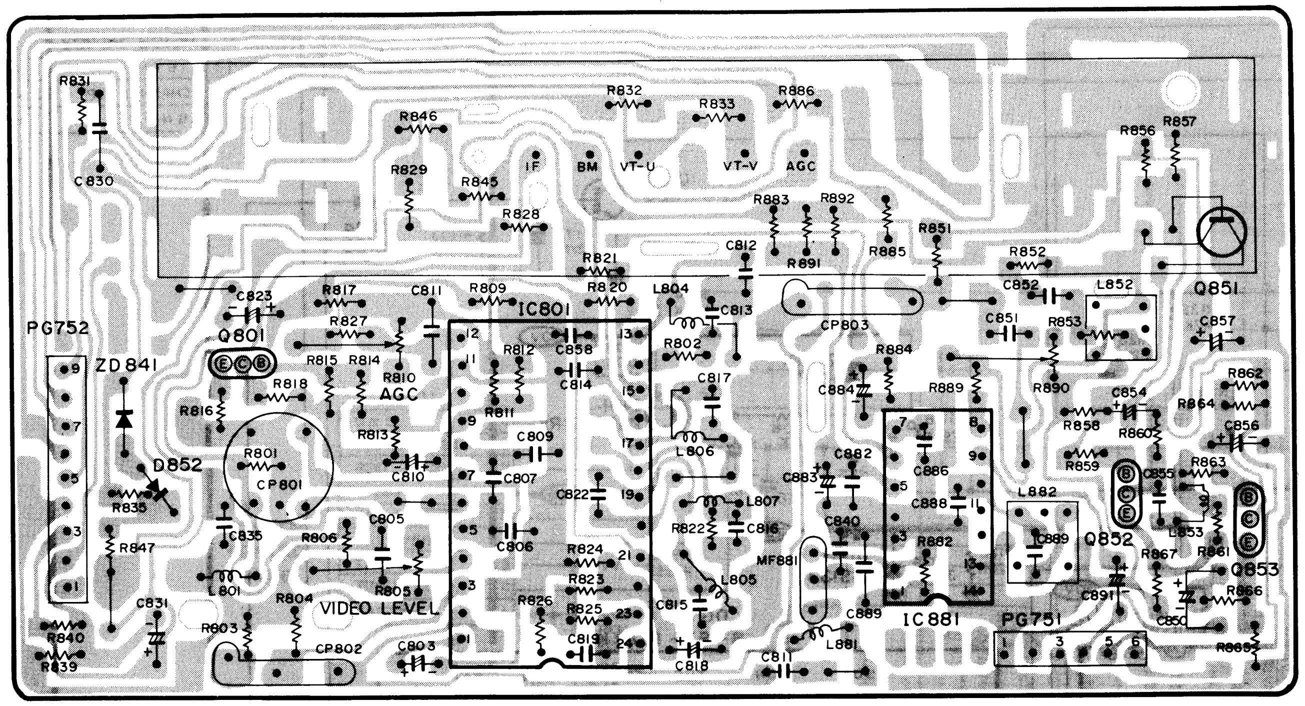

AERIAL INPUT
C1 50p
C2 50p
L9
L10
C20 27p
C21 27p
C22 33p
L1
L2
D1 1S953
L11
R3 220~470
R4 2.2K
C5 0~5p
C6 1000p
C3 0~3p
R1 470
C4 1~9p
R2 15
Q1 2SC2570A
L3
R6 12~33
C7 1000p
R5 100
C18 1000p
C8 0~5p
L4
R7 220
C9 1000p
C10 1000p
L5
R11 1.8K
C13 1000p
R10 560~1.5K
C11 0~5p
R8 560
C12 1~9
R9 15
Q2 2SC2570A
C17 1000p
L6
R14 120
C14 1000p
C15 0~3p
R12 470
R13 470
L7
L8
C16 0~3p
RF OUTPUT JACK
RF INPUT JACK
C19 1000p
12V
To TUNER/I
GND
VTR OUT
RF BOOSTER P.C.B


RF INPUT JACK
To TUNER/IF 12V
AERIAL INPUT
VTROUT
C19
R14
R7
C9
C10
L4
R6
R12
L7
C14
L3
C4
C8
Q2
R1
Q1
C6
C3
L8
C5
C16
R11
C11
C21
L10
R3
C20
C22
L9
D1
RF BOOSTER P.C.B
RF OUTPUT JACK

RF CONVERTER [For UK model]


PG01
1 GND
2 9V
3 —
4 GND
5 AUDIO
6 —
7 GND
8 VIDEO
TO JACK PG1707
IC1 BA7003
BIAS CONTROLLER
CLAMP
FM MOD
+B
GND
R12 560
C16 0.047
VR1 3.3X
C17 10/16
C2 0.01
C3 1/16
R4 6.8K
C1 1/16
R2 160K
C15 470P
R3 100
R5 1.1K
C6 10/16
C4 0.047
R1 1.1K
C7 0.047
C8 0.01
R6 3.3K
L1 33μ
C10 8P
R8 2K
R7 330
C11 33P
C13 100P
C12 68P
T1 fs: 6MHz
D1 ISS97
D2 ISS97
C9 18P
T2
R51 2.2K
R53 390
C51 18P
C53 1P
C52 51P
R52 3.3K
L51
Q1 2SC684
VC1
C56 5P
C14 5P
R9 47
R10 68
R11 220
RF OUT To RF BOOSTER
TSG SWITCH OFF ON
IC2 BA7004
TSG AMP
OSC
CL1
C16 4700P
C15 4700P
C17 10/16
RF CONVERTER P.C.B

IF [For UK model]


R831
C830
R846
R829
R845
R828
IF
BM
VT-U
VT-V
AGC
R832
R833
R886
R856
R857
R883
R892
R885
R851
R821
C812
R891
R852
C852
L852
Q851
PG752
C823
Q801
ZD841
R817
R827
C811
R809
R820
L804
IC801
C813
CP803
C851
R853
C857
R815
R814
R810
AGC
R812
C858
C814
R802
R884
C884
R889
R890
R862
R816
R818
R811
C817
C854
R864
R858
R860
C856
D852
R801
CP801
R813
C810
C809
C807
L806
C882
C886
R859
R863
C855
R835
C822
C883
L807
C888
L882
L853
C835
C805
R806
C806
R822
C816
C840
R882
C889
Q852
R847
R824
MF881
R867
R881
Q853
L801
R823
L805
C891
R866
C831
R804
R805
VIDEO LEVEL
R826
R825
C815
C850
R840
R803
C819
L881
IC881
PG751
R839
CP802
C803
C818
C811
R865

TUNER / IF P.C.B

PG751

1	GND
2	VIDEO
3	GND
4	AUDIO
5	$\overline{\text{PB}}$12V
6	12V

To
Y/CHROMA
PG032
VIA
CN032

PG752

1	AFS 1
2	AFS 2
3	$\overline{\text{PB}}$12V
4	GND
5	VT
6	—
7	—
8	—
9	DEF.

To
PROGRAMME
PRESET
PG1756
VIA
CN056

IC801

12	9	13	4.6
11	0	14	4.6
10	0	15	2.0
9	7.1	16	11.0
8	4.6	17	4.2
7	3.4	18	6.6
6	3.6	19	6.6
5	4.6	20	24.2
4	0.8	21	11.8
3	4.9	22	2.4
2	5	23	11.8
1	5.7	24	0.6

IC881

7	6.5	8	5.7
6	1.4	9	3.6
5	10.6	10	3.6
4	0	11	0
3	0	12	0
2	1.9	13	0
1	0	14	0

Q801

B	0
C	10.2
E	0

Q852

B	3.5
C	9.0
E	2.9

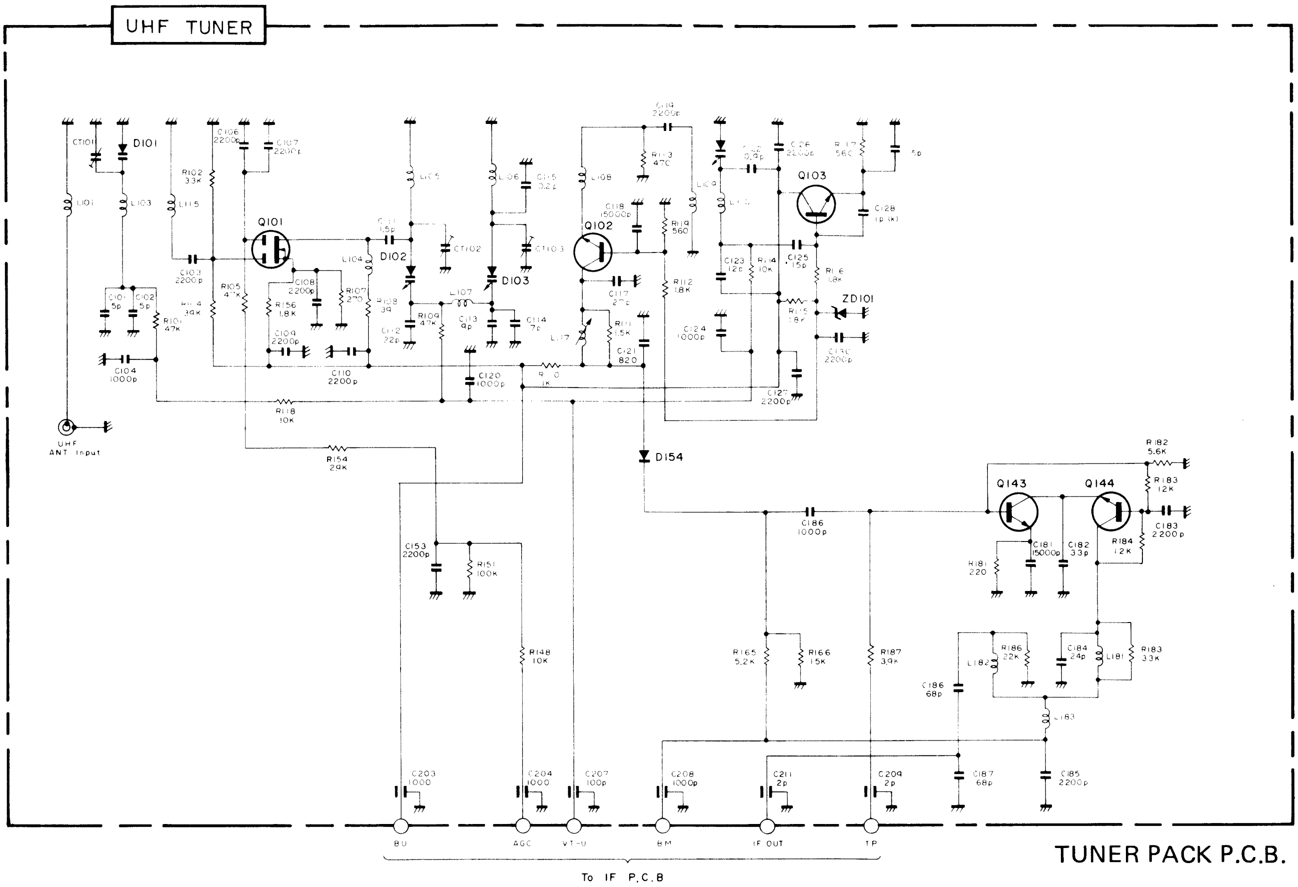
Q851

B	5.9
C	3.4
E	6.5

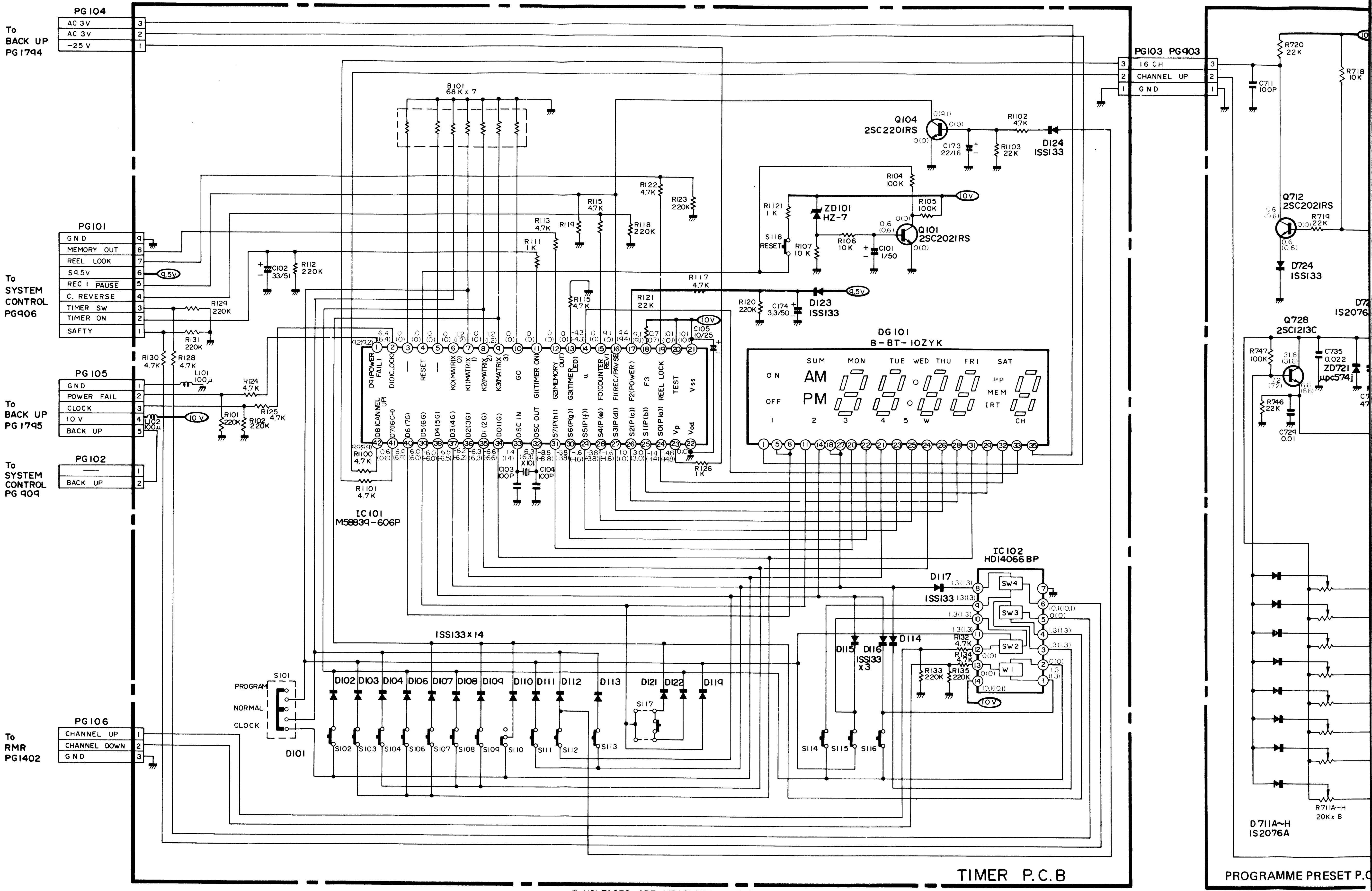
Q853

B	2.7
C	9.0
E	2.0

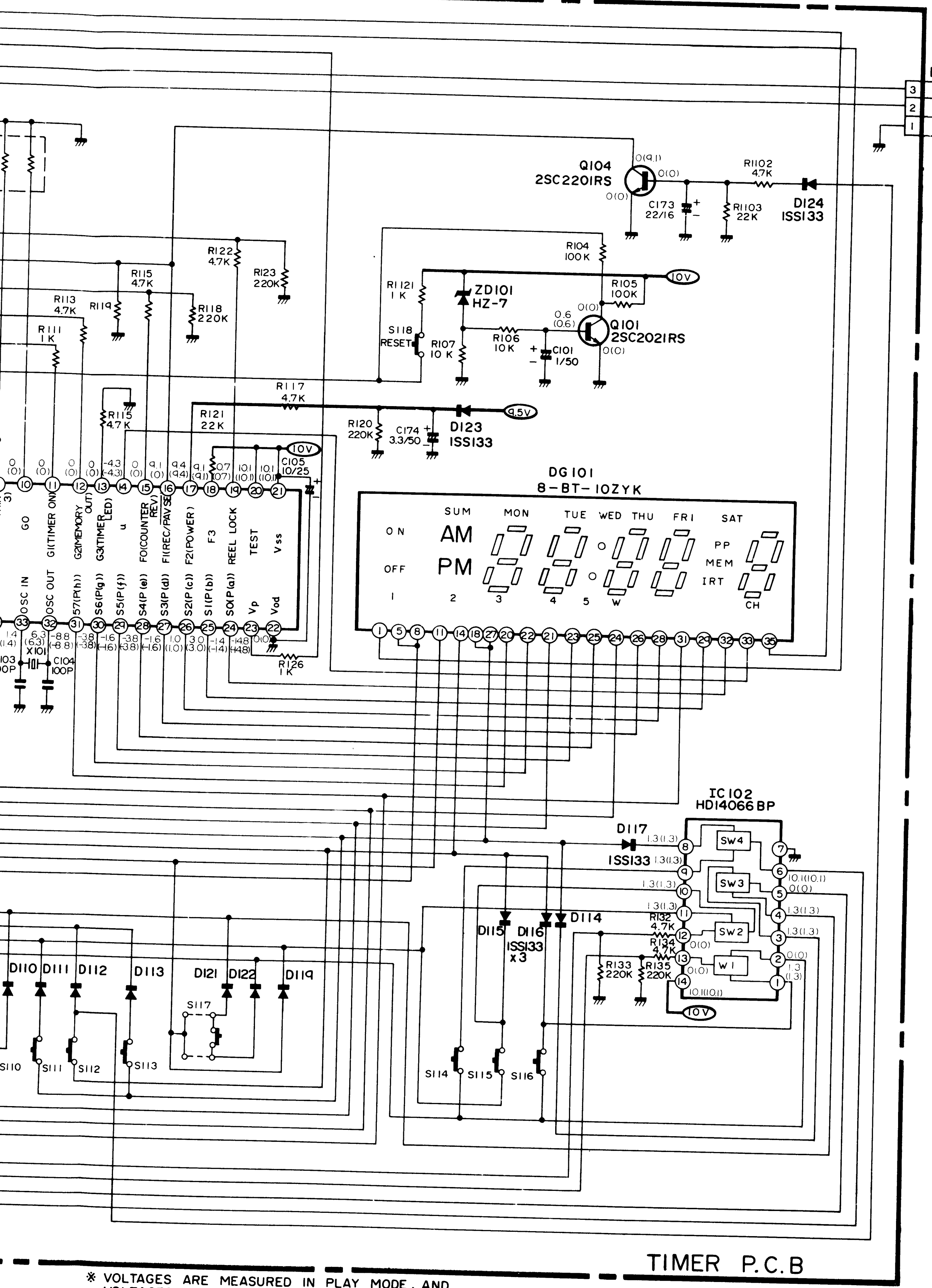
TUNER PACK [For UK model]


UHF TUNER
D101
Q101
D102
D103
Q102
Q103
ZD101
D154
Q143
Q144
UHF ANT Input
BU
AGC
VT-U
BM
IF OUT
TP
To IF P.C.B
TUNER PACK P.C.B.

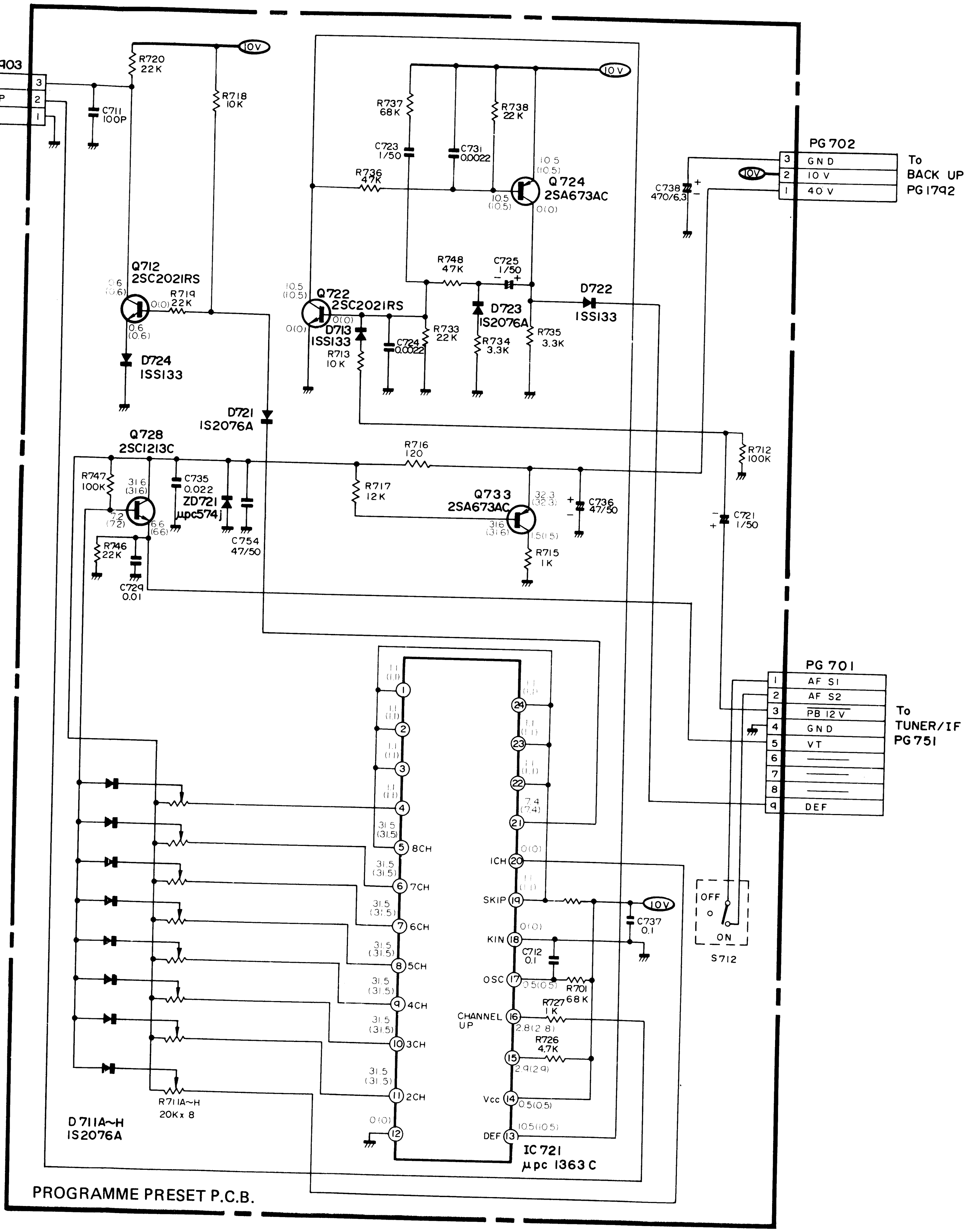
TIMER/PROGRAMME PRESET [For UK model]

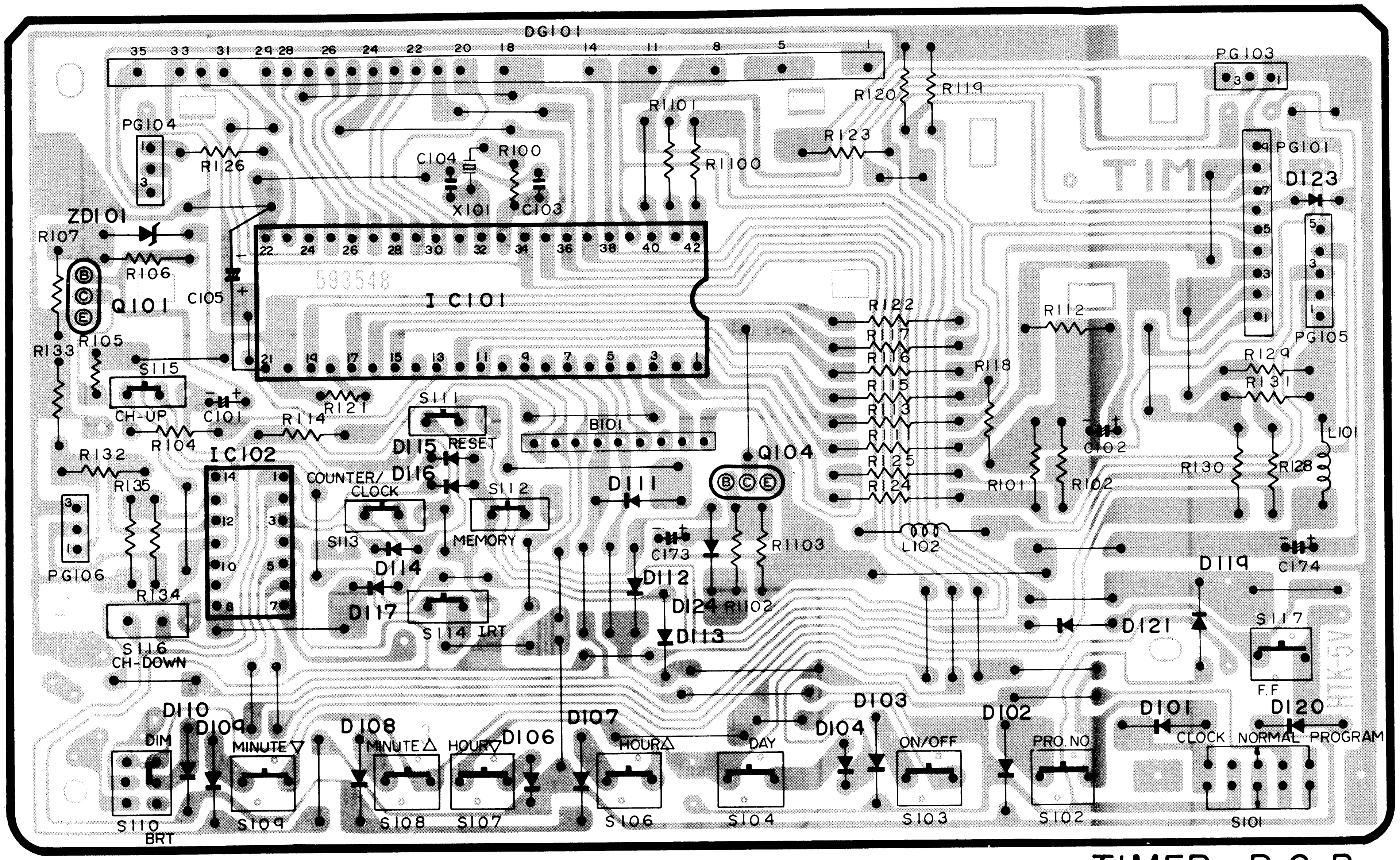

PG 104
AC 3V
AC 3V
-25 V
To BACK UP PG 1794
PG101
GND
MEMORY OUT
REEL LOOK
S9.5V
REC I PAUSE
C. REVERSE
TIMER SW
TIMER ON
SAFTY
To SYSTEM CONTROL PG906
PG 105
GND
POWER FAIL
CLOCK
10 V
BACK UP
To BACK UP PG 1795
PG102
BACK UP
To SYSTEM CONTROL PG 909
PG106
CHANNEL UP
CHANNEL DOWN
GND
To RMR PG1402
B101 68K x 7
C102 33/51
R112 220K
R129 220K
R131 220K
R130 4.7K
R128 4.7K
L101 100μ
L102 100μ
R124 4.7K
R125 4.7K
R101 220K
R102 220K
R113 4.7K
R111 1K
R119
R115 4.7K
R118 220K
R122 4.7K
R123 220K
R121 22K
R117 4.7K
R120 220K
C174 3.3/50
D123 1SS133
C105 10/25
R126 1K
R1100 4.7K
R1101 4.7K
C103 100P
X101
C104 100P
IC101 M58839-606P
D9(POWER FAIL)
D10(CLOCK)
RESET
K0(MATRIX 0)
K1(MATRIX 1)
K2(MATRIX 2)
K3(MATRIX 3)
G0
G1(TIMER ON)
G2(MEMORY OUT)
G3(TIMER LED)
F0(COUNTER REV)
F1(REC/PAUSE)
F2(POWER)
F3
REEL LOCK
TEST
Vss
D8(CANNEL UP)
D7(16CH)
D6(7G)
D5(6G)
D4(5G)
D3(4G)
D2(3G)
D1(2G)
D0(1G)
OSC IN
OSC OUT
S7(P(h))
S6(P(g))
S5(P(f))
S4(P(e))
S3(P(d))
S2(P(c))
S1(P(b))
S0(P(a))
Vp
Vdd
Q104 2SC2201RS
C173 22/16
R1103 22K
R1102 4.7K
D124 1SS133
R104 100K
R105 100K
R1121 1K
ZD101 HZ-7
S118 RESET
R107 10K
R106 10K
C101 1/50
Q101 2SC2021RS
DG101 8-BT-10ZYK
SUM MON TUE WED THU FRI SAT
ON
OFF
AM
PM
PP
MEM
IRT
CH
1 2 3 4 5 W
IC102 HD14066BP
SW4
SW3
SW2
W1
D117 1SS133
D114
D115 D116 1SS133 x3
R132 4.7K
R134 4.7K
R133 220K
R135 220K
1SS133 x 14
S101
PROGRAM
NORMAL
CLOCK
D101
D102 D103 D104 D106 D107 D108 D109 D110 D111 D112 D113 D121 D122 D119
S102 S103 S104 S106 S107 S108 S109 S110 S111 S112 S113
S117
S114 S115 S116
TIMER P.C.B
PG103 PG903
16 CH
CHANNEL UP
GND
R720 22K
C711 100P
R718 10K
Q712 2SC2021RS
R719 22K
D724 1SS133
Q728 2SC1213C
R747 100K
C735 0.022
ZD721 μpc574J
R746 22K
C729 0.01
D711A~H 1S2076A
R711A~H 20K x 8
PROGRAMME PRESET P.C

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN( ) ARE MEASURED IN RECORED MODE.


PG103 PG903
16 CH
CHANNEL UP
GND
Q104
2SC2201RS
R1102 4.7K
D124 1SS133
C173 22/16
R1103 22K
R104 100K
R105 100K
10V
Q101
2SC2021RS
ZD101 HZ-7
R1121 1K
S118 RESET
R107 10K
R106 10K
C101 1/50
R122 4.7K
R123 220K
R115 4.7K
R113 4.7K
R119
R118 220K
R111 1K
R117 4.7K
R121 22K
R120 220K
C174 3.3/50
D123 1SS133
9.5V
C105 10/25
DG101
8-BT-10ZYK
SUN MON TUE WED THU FRI SAT
ON
OFF
AM
PM
PP
MEM
IRT
CH
G0
G1(TIMER ON)
G2(MEMORY OUT)
G3(TIMER LED)
u
F0(COUNTER REV)
F1(REC/PAV SE)
F2(POWER)
F3
REEL LOCK
TEST
Vss
OSC IN
OSC OUT
S7(P(h))
S6(P(g))
S5(P(f))
S4(P(e))
S3(P(d))
S2(P(c))
S1(P(b))
S0(P(a))
Vp
Vdd
X101
C104 100P
R126 1K
IC102
HD14066BP
SW4
SW3
SW2
W1
D117
1SS133
D115 D116
1SS133 x3
D114
R132 4.7K
R134 4.7K
R133 220K
R135 220K
D110 D111 D112 D113
D121 D122 D119
S117
S110 S111 S112 S113
S114 S115 S116
TIMER P.C.B

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND VOLTAGES IN( ) ARE MEASURED IN RECORED MODE.


R720 22K
R718 10K
C711 100P
10V
Q712
2SC2021RS
R719 22K
D724
1SS133
D721
1S2076A
R737 68K
R738 22K
C723 1/50
C731 0.0022
R736 4.7K
Q724
2SA673AC
R748 4.7K
C725 1/50
D722
1SS133
Q722
2SC2021RS
D713
1SS133
R713 10K
C724 0.0022
R733 22K
D723
1S2076A
R734 3.3K
R735 3.3K
PG702
GND
10 V
40 V
To
BACK UP
PG1792
C738 470/6.3
Q728
2SC1213C
R747 100K
C735 0.022
ZD721
μpc574J
C754 47/50
R746 22K
C729 0.01
R716 120
R717 12K
Q733
2SA673AC
C736 47/50
R715 1K
R712 100K
C721 1/50
PG701
AF S1
AF S2
PB 12V
GND
VT
DEF
To
TUNER/IF
PG751
8CH
7CH
6CH
5CH
4CH
3CH
2CH
1CH
SKIP
KIN
OSC
CHANNEL UP
Vcc
DEF
C737 0.1
C712 0.1
R701 68K
R727 1K
R726 4.7K
IC721
μpc 1363C
OFF
ON
S712
R711A~H
20K x 8
D711A~H
1S2076A
PROGRAMME PRESET P.C.B.


DG101
35
33
31
29
28
26
24
22
20
18
14
11
8
5
1
PG103
R120
R119
PG104
R126
R1101
R123
C104
R100
R1100
X101
C103
PG101
D123
ZD101
R107
R106
Q101
C105
IC101
593548
22
24
26
28
30
32
34
36
38
40
42
21
19
17
15
13
11
9
7
5
3
1
R122
R117
R116
R115
R113
R111
R125
R124
R112
R118
R129
R131
PG105
R133
R105
S115
CH-UP
C101
R121
R114
S111
RESET
B101
R104
D115
D116
COUNTER/
CLOCK
Q104
D111
R132
IC102
R135
S112
MEMORY
S113
D114
C173
R1103
L102
R101
R102
C102
R130
R128
L101
PG106
R134
D112
D117
S114
IRT
D124
R1102
D113
D119
C174
D121
S117
F.F
S116
CH-DOWN
D110
D109
DIM
MINUTE▽
D108
MINUTE△
HOUR▽
D106
D107
HOUR△
DAY
D103
D104
ON/OFF
D102
PRO. NO
D101
D120
CLOCK
NORMAL
PROGRAM
S110
BRT
S109
S108
S107
S106
S104
S103
S102
S101
TIMER

TIMER P.C.B

IC101

22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
0 (0)	-14.8(-14.8)	-1.4(-1.4)	3.0(3.0)	1.0(1.0)	-1.6(-1.6)	-3.8(-3.8)	-1.6(-1.6)	-3.8(-3.8)	-8.8(-8.8)	6.3(6.3)	1.4(1.4)	-6.6(-6.6)	-6.3(-6.3)	-6.2(-6.2)	-6.5(-6.5)	-6.0(-6.0)	6.0(6.0)	6.9(6.9)	0.6(0.6)	9.9(9.9)
21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
10.1(10.1)	10.1(10.1)	0.7(0.7)	9.1(9.1)	9.4(9.4)	0(9.1)	0 (0)	-4.3(-4.3)	0 (0)	0 (0)	0 (0)	0 (0)	1.2(1.2)	0 (0)	1.2(1.2)	0 (0)	0 (0)	0(0)	0 (0)	6.4(6.4)	9.2(9.2)

IC102

14	10.1 (10.1)	1	1.3 (1.3)
13	0 (0)	2	0 (0)
12	0 (0)	3	1.3 (1.3)
11	1.3 (1.3)	4	1.3 (1.3)
10	1.3 (1.3)	5	0 (0)
9	1.3 (1.3)	6	10.1 (10.1)
8	1.3 (1.3)	7	0 (0)

Q101

B	0.6 (0.6)
C	0 (0)
E	0 (0)

Q104

B	0 (0)
C	0 (9.1)
E	0 (0)

PG101

9	GND
8	MEMORY OUT
7	REEL LOCK
6	S9.5V
5	REC/PAUSE
4	C.REVERSE
3	TIMER SW
2	TIMER ON
1	SAFTY

To
SYSTEM CONTROL
PG906

PG106

3	GND
2	CHANNEL DOWN
1	CHANNEL UP

To
RMR
PG1402

PG103

1	GND
2	CHANNEL UP
3	16CH

To
CHANNEL PRESET
PG703

PG104

1	−25V
2	AC3V
3	AC3V

To
BACK UP
PG1794

PG105

5	GND
4	10V
3	CLOCK
2	POWER FAIL
1	GND

To
BACK UP
PG1795

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN ( ) AREMEASURED IN RECORED MODE.

PG703

3	16CH
2	CHANNEL UP
1	GND

TO
TIMER
PG103

PG702

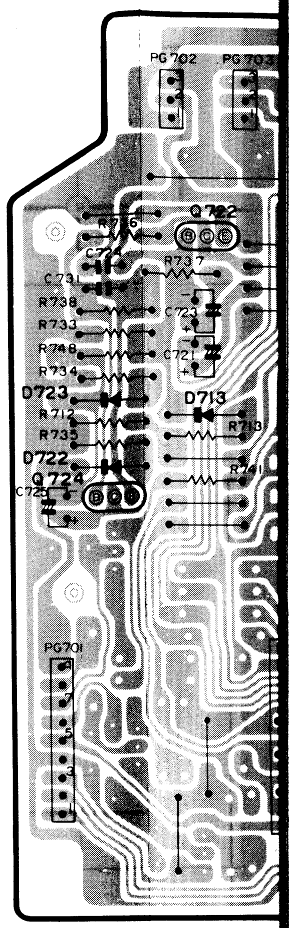
3	GND
2	10V
1	40V

TO
BACK UP
PG1792

PG701

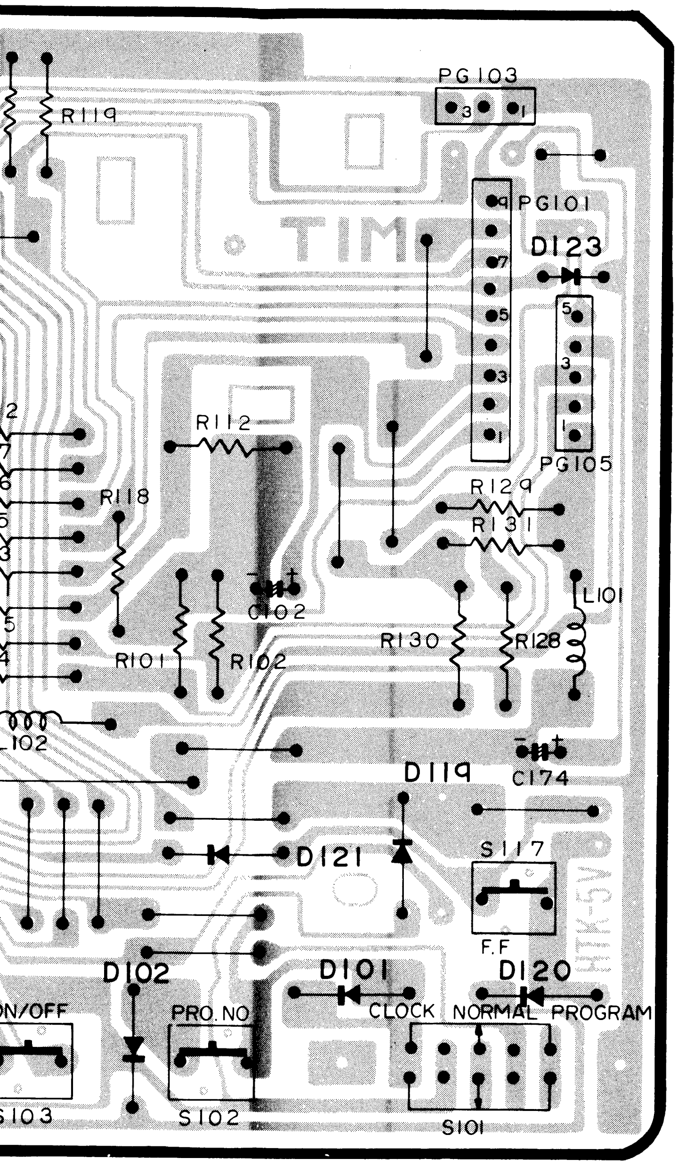
9	DEF
8	——
7	——
6	——
5	VT
4	GND
3	$\overline{\text{PB12V}}$
2	AFSZ
1	AFS1

TO
TUNER/IF
PG752


PG702
PG703
Q722
R736
C722
R737
C731
R738
R733
R748
R734
D723
R712
R735
D722
Q724
C723
C721
D713
R713
R741
C725
PG701

IC712

1	2	3	4	5
1.1(1.1)	1.1(1.1)	1.1(1.1)	1.1(1.1)	31.5(31.5)
24	23	22	21	20
1.1(1.1)	1.1(1.1)	1.1(1.1)	7.4(7.4)	0(0)


PG103
R119
PG101
D123
TIM
R112
PG105
R118
R129
R131
C102
L101
R130
R128
R101
R102
L102
C174
D119
D121
S117
F.F
D102
D101
D120
N/OFF
PRO. NO
CLOCK
NORMAL
PROGRAM
S103
S102
S101
HTK-5V

TIMER P.C.B

36	37	38	39	40	41	42
-6.2(-6.2)	-6.5(-6.5)	-6.0(-6.0)	6.0(6.0)	6.9(6.9)	0.6(0.6)	9.9(9.9)
7	6	5	4	3	2	1
1.2(1.2)	0(0)	0(0)	0(0)	0(0)	6.4(6.4)	9.2(9.2)

PG101

9	GND
8	MEMORY OUT
7	REEL LOCK
6	S9.5V
5	REC/PAUSE
4	C.REVERSE
3	TIMER SW
2	TIMER ON
1	SAFTY

To
SYSTEM CONTROL
PG906

PG106

3	GND
2	CHANNEL DOWN
1	CHANNEL UP

To
RMR
PG1402

PG103

1	GND
2	CHANNEL UP
3	16CH

To
CHANNEL PRESET
PG703

PG104

1	-25V
2	AC3V
3	AC3V

To
BACK UP
PG1794

PG105

5	GND
4	10V
3	CLOCK
2	POWER FAIL
1	GND

To
BACK UP
PG1795

PG703

3	16CH
2	CHANNEL UP
1	GND

TO
TIMER
PG103

PG702

3	GND
2	10V
1	40V

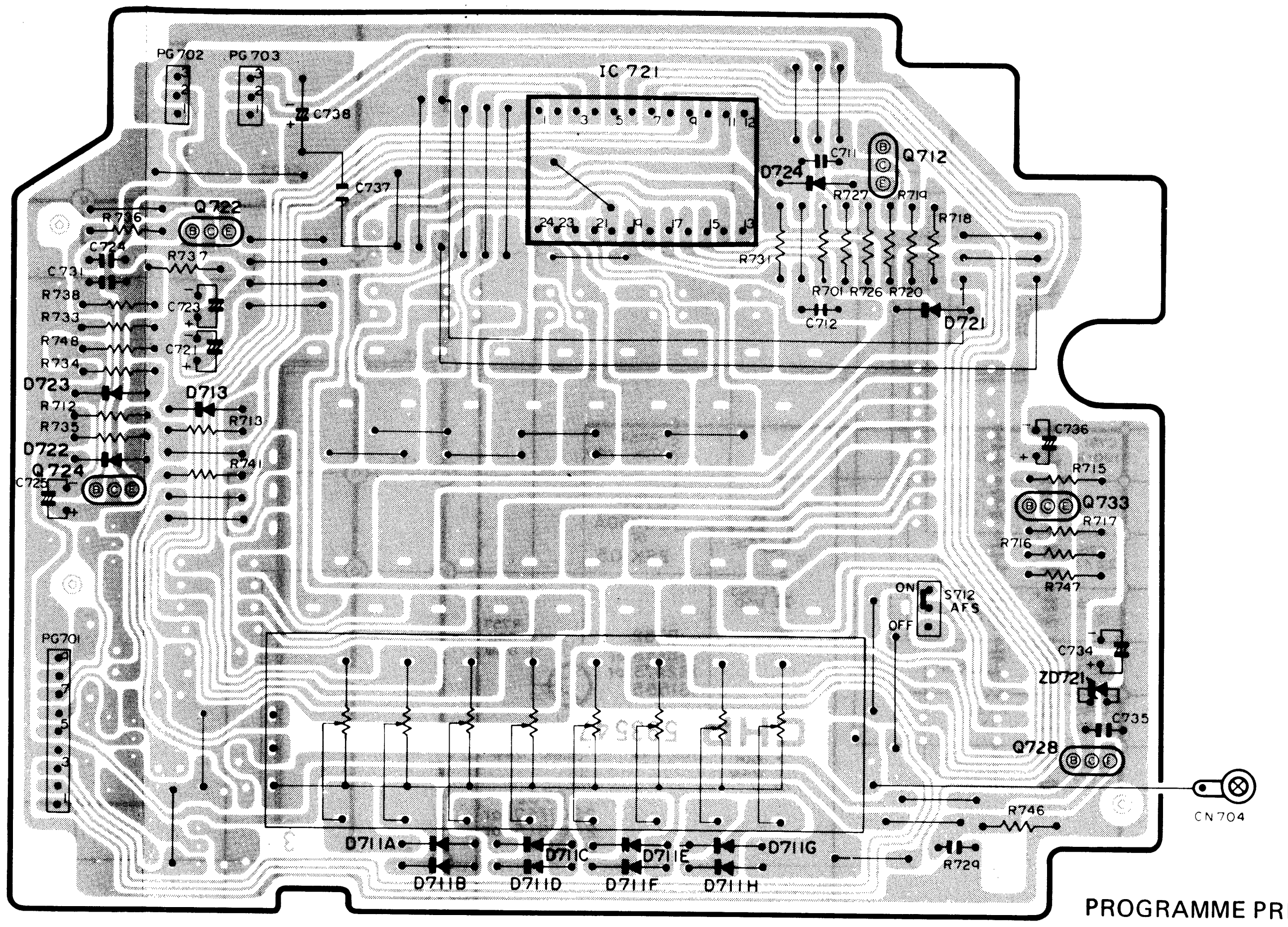
TO
BACK UP
PG1792

PG701

9	DEF
8	——
7	——
6	——
5	VT
4	GND
3	$\overline{\text{PB}}$12V
2	AFS2
1	AFS1

TO
TUNER/IF
PG752

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN ( ) AREMEASURED IN RECORED MODE.


PG702
PG703
IC721
C738
C737
C711
Q712
D724
R727
R719
R718
R736
Q722
C724
R737
C731
R738
R733
C723
C721
R748
R734
D723
D713
R712
R713
R735
D722
R741
Q724
C726
R731
R701
R726
R720
C712
D721
C736
R715
Q733
R717
R716
R747
ON
OFF
S712
AFS
C734
ZD721
C735
Q728
CN704
R746
R729
PG701
D711A
D711B
D711C
D711D
D711E
D711F
D711G
D711H

PROGRAMME PRESET P.C.B.

IC712

1	2	3	4	5	6	7	8	9	10	11	12
1.1(1.1)	1.1(1.1)	1.1(1.1)	1.1(1.1)	31.5(31.5)	31.5(31.5)	31.5(31.5)	31.5(31.5)	31.5(31.5)	31.5(31.5)	31.5(31.5)	0(0)
24	23	22	21	20	19	18	17	16	15	14	13
1.1(1.1)	1.1(1.1)	1.1(1.1)	7.4(7.4)	0(0)	1.1(1.1)	0(0)	0.5(0.5)	2.8(2.8)	2.9(2.9)	10.5(10.5)	10.5(10.5)

Q712

B	0(0)
C	0.6(0.6)
E	0.6(0.6)

Q722

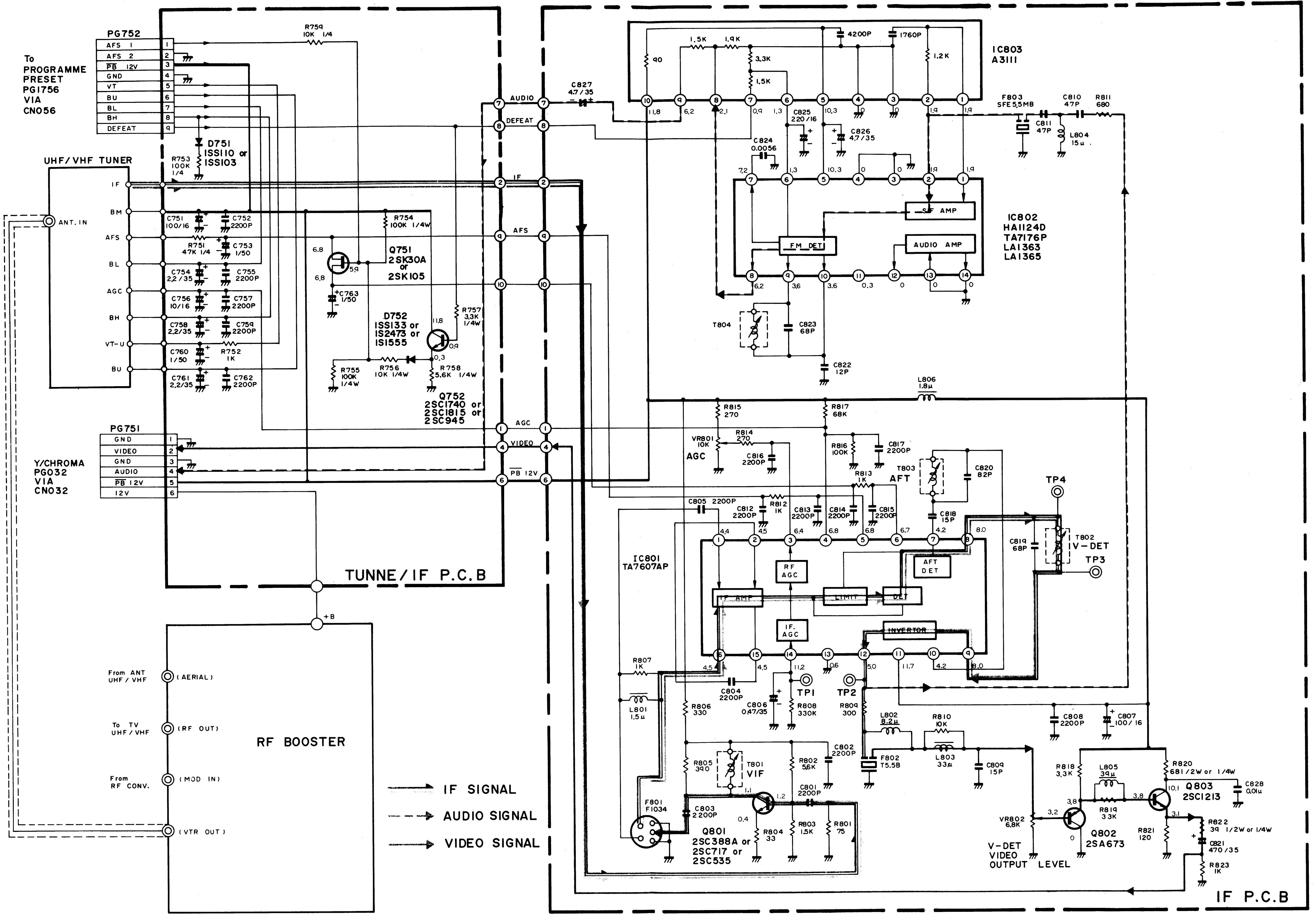
B	0(0)
C	10.5(10.5)
E	0(0)

Q724

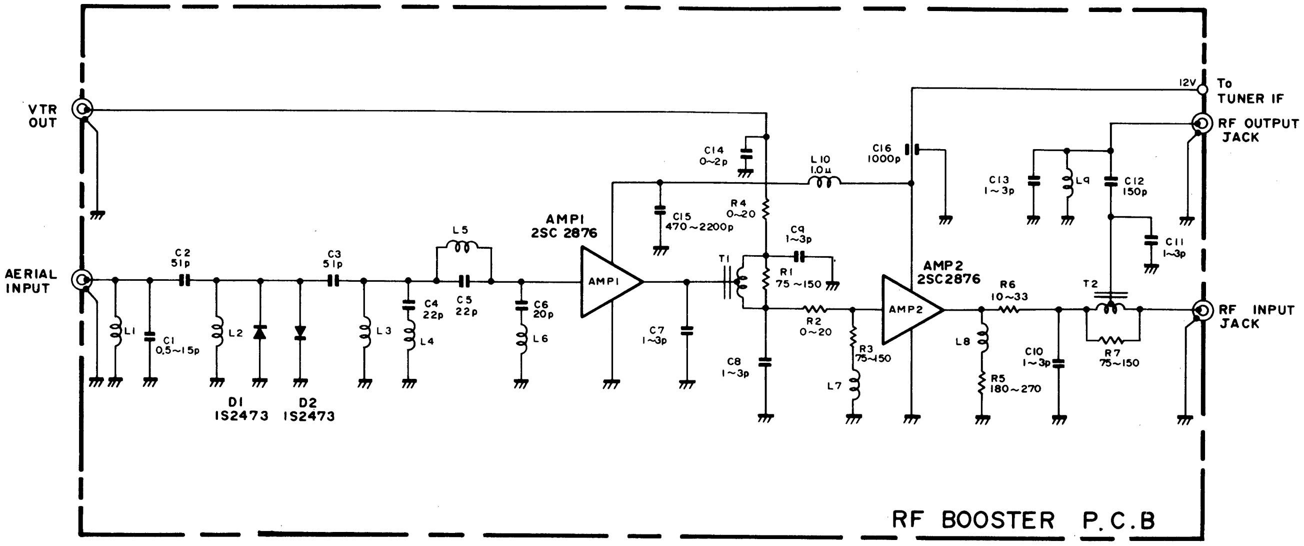
B	10.5(10.5)
C	0(0)
E	10.5(10.5)

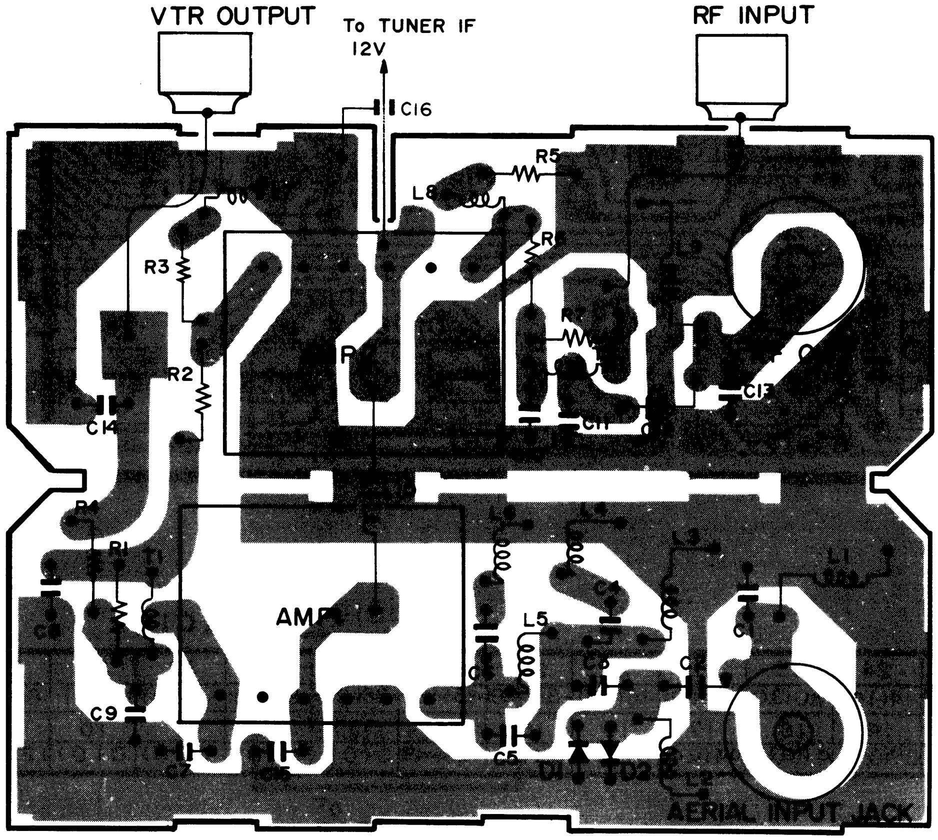
※ VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN( ) ARE MEASURED IN RECORED MODE.

TUNER IF [Except for UK model]


PG752
AFS 1
AFS 2
PB 12V
GND
VT
BU
BL
BH
DEFEAT
To PROGRAMME PRESET PG1756 VIA CN056
R759 10K 1/4
D751 ISS110 or ISS103
R753 100K 1/4
UHF/VHF TUNER
IF
BM
AFS
BL
AGC
BH
VT-U
BU
ANT. IN
C751 100/16
C752 2200P
R751 47K 1/4
C753 1/50
C754 2.2/35
C755 2200P
C756 10/16
C757 2200P
C758 2.2/35
C759 2200P
C760 1/50
R752 1K
C761 2.2/35
C762 2200P
R754 100K 1/4W
Q751 2SK30A or 2SK105
C763 1/50
D752 ISS133 or IS2473 or IS1555
R757 3.3K 1/4W
R755 100K 1/4W
R756 10K 1/4W
R758 5.6K 1/4W
Q752 2SC1740 or 2SC1815 or 2SC945
PG751
GND
VIDEO
GND
AUDIO
PB 12V
12V
Y/CHROMA PG032 VIA CN032
AUDIO
DEFEAT
IF
AFS
AGC
VIDEO
PB 12V
TUNNE/IF P.C.B
+B
From ANT UHF/VHF
(AERIAL)
To TV UHF/VHF
(RF OUT)
From RF CONV.
(MOD IN)
(VTR OUT)
RF BOOSTER
IF SIGNAL
AUDIO SIGNAL
VIDEO SIGNAL
C827 4.7/35
IC803 A3111
4200P
1760P
1.5K
1.9K
3.3K
1.5K
90
1.2K
C825 220/16
C826 4.7/35
C824 0.0056
F803 SFE5.5MB
C810 47P
R811 680
C811 47P
L804 15μ
IC802 HA1124D TA7176P LA1363 LA1365
SIF AMP
FM DET
AUDIO AMP
T804
C823 68P
C822 12P
L806 1.8μ
R815 270
R817 68K
VR801 10K AGC
R814 270
C816 2200P
R816 100K
C817 2200P
R813 1K
T803 AFT
C820 82P
C805 2200P
C812 2200P
R812 1K
C813 2200P
C814 2200P
C815 2200P
C818 15P
TP4
C819 68P
T802 V-DET
TP3
IC801 TA7607AP
RF AGC
AFT DET
IF AMP
LIMIT
DET
IF. AGC
INVERTOR
R807 1K
L801 1.5μ
C804 2200P
C806 0.47/35
R808 330K
TP1
TP2
R809 300
R806 330
L802 8.2μ
R810 10K
L803 33μ
C809 15P
C808 2200P
C807 100/16
R805 390
T801 VIF
R802 5.6K
C802 2200P
F802 T5.58
C801 2200P
F801 F1034
C803 2200P
Q801 2SC388A or 2SC717 or 2SC535
R804 33
R803 1.5K
R801 75
R818 3.3K
L805 39μ
R819 3.3K
R820 681/2W or 1/4W
Q803 2SC1213
C828 0.01μ
VR802 6.8K
Q802 2SA673
R821 120
R822 39 1/2W or 1/4W
C821 470/35
R823 1K
V-DET VIDEO OUTPUT LEVEL
IF P.C.B

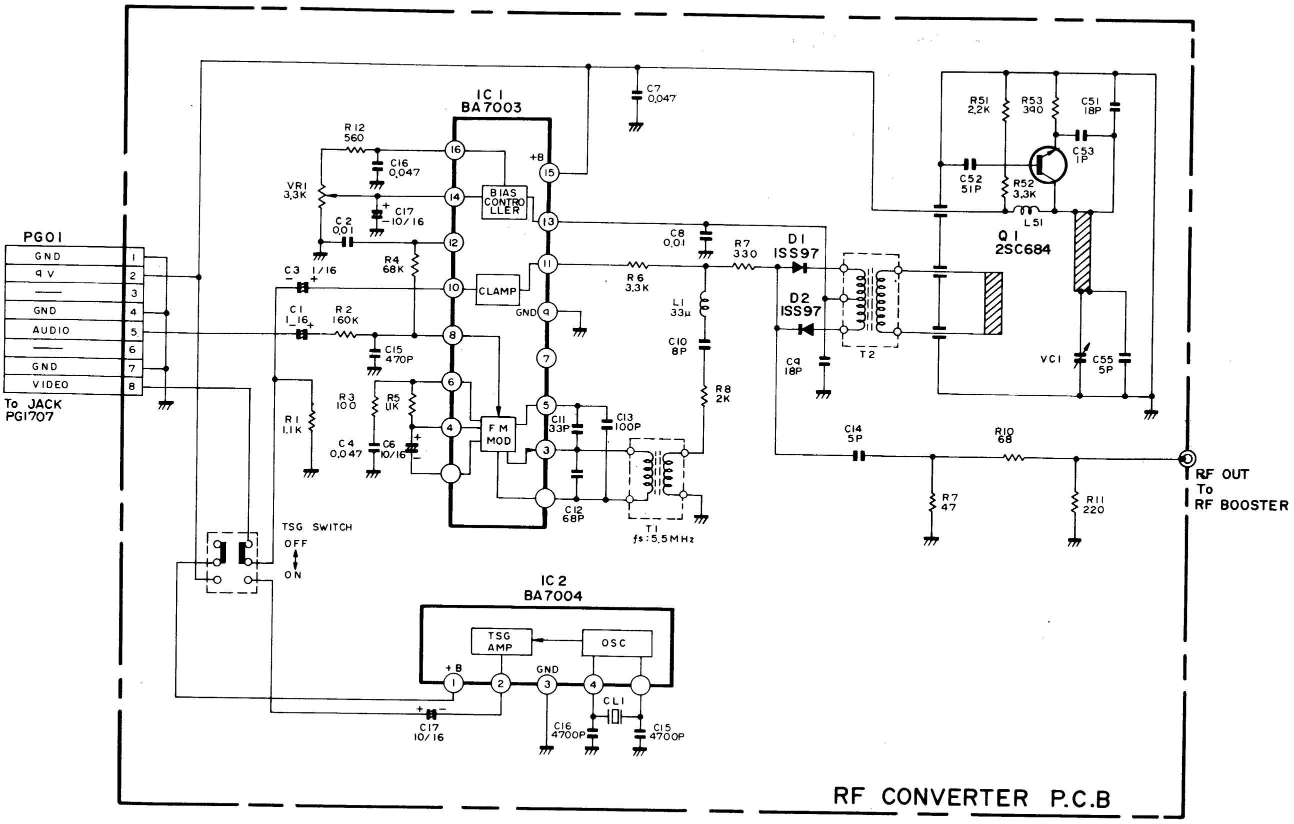
RF BOOSTER [Except for UK model]


VTR OUT
AERIAL INPUT
C2 51p
C3 51p
L1
C1 0.5~15p
L2
D1 1S2473
D2 1S2473
L3
L4
C4 22p
L5
C5 22p
C6 20p
L6
AMP1 2SC 2876
AMP1
C7 1~3p
C14 0~2p
C15 470~2200p
R4 0~20
T1
R1 75~150
C8 1~3p
C9 1~3p
L10 1.0μ
C16 1000p
R2 0~20
R3 75~150
L7
AMP2 2SC2876
AMP2
R6 10~33
L8
R5 180~270
C10 1~3p
T2
R7 75~150
C13 1~3p
L9
C12 150p
C11 1~3p
12V
To TUNER IF
RF OUTPUT JACK
RF INPUT JACK
RF BOOSTER P.C.B

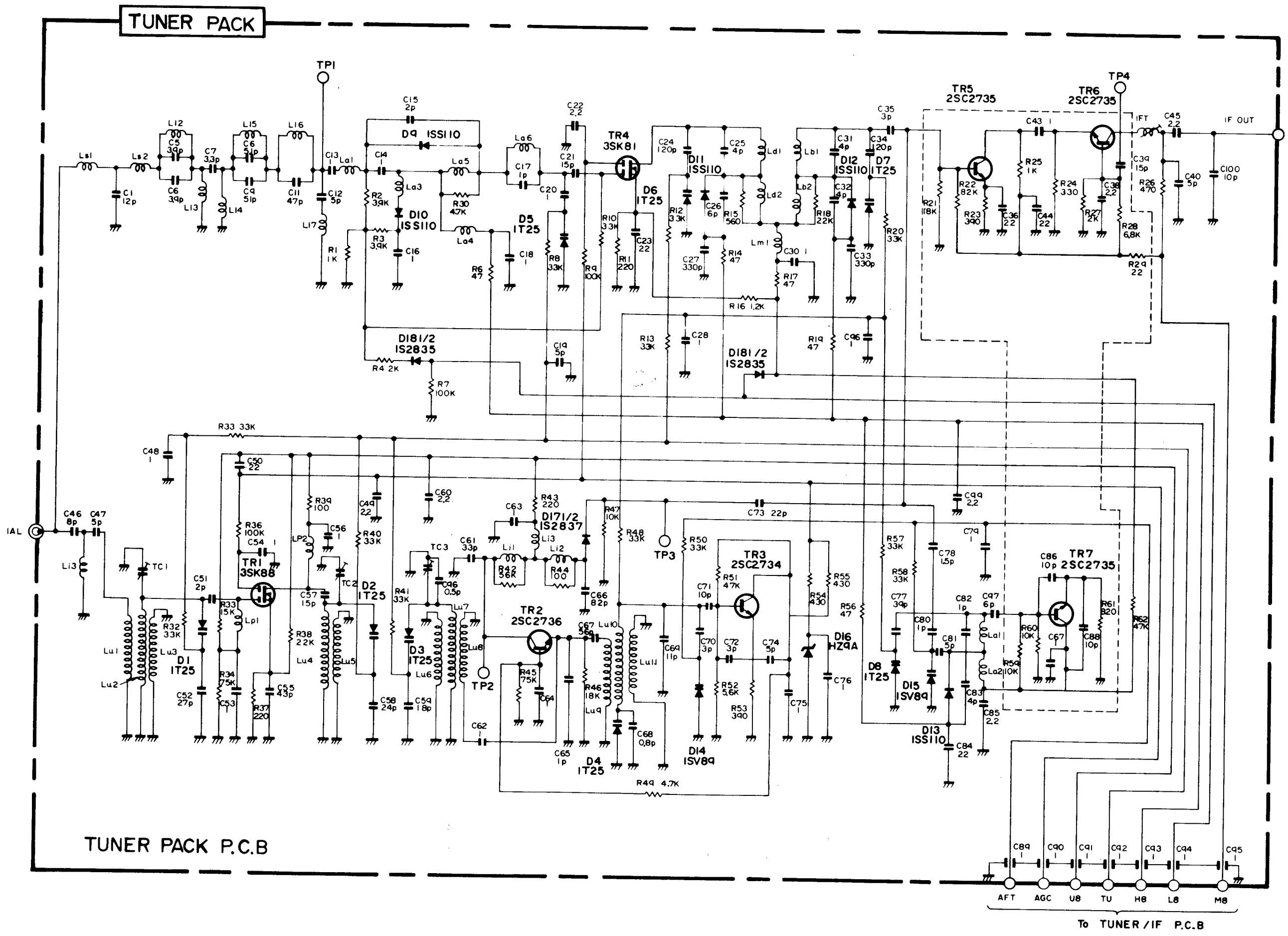

VTR OUTPUT
To TUNER IF
12V
C16
RF INPUT
R5
L8
R3
R6
R2
R7
C14
C11
C13
R4
R1
T1
C8
C9
C7
C15
AMP1
L6
L4
L3
L1
L5
C4
C6
C5
C3
C2
C1
D1
D2
L2
AERIAL INPUT JACK

RF BOOSTER P.C.B

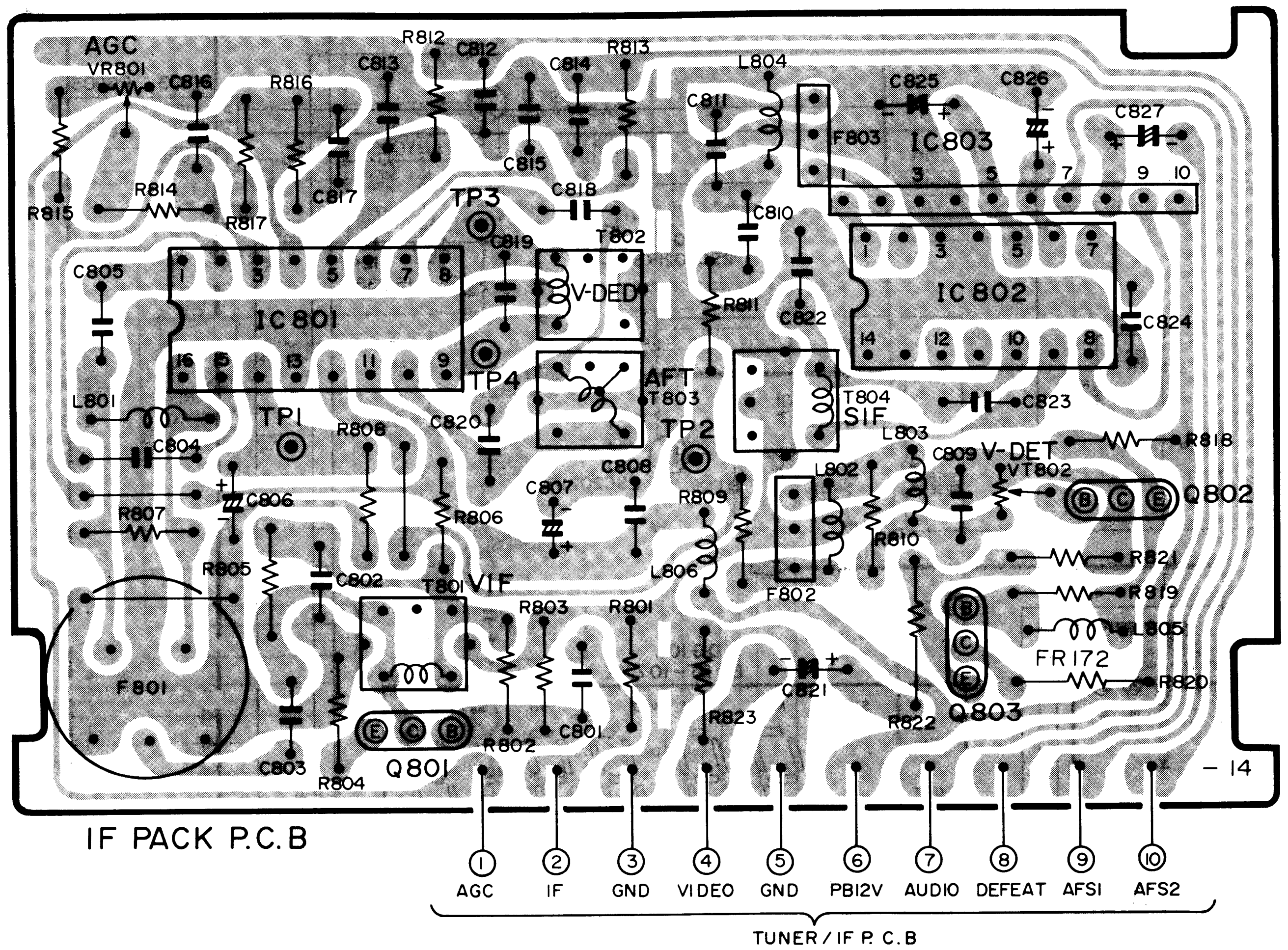
RF CONVERTER [Except for UK model]


IC 1
BA7003
IC 2
BA7004
PG01
GND
9 V
GND
AUDIO
GND
VIDEO
To JACK PG1707
R12 560
C16 0.047
VR1 3.3K
C17 10/16
C2 0.01
R4 68K
C3 1/16
C1 1/16
R2 160K
C15 470P
R3 100
R5 1K
R1 1.1K
C4 0.047
C6 10/16
BIAS CONTROLLER
CLAMP
FM MOD
+B
GND
C7 0.047
C8 0.01
R7 330
D1 1SS97
D2 1SS97
R6 3.3K
L1 33μ
C10 8P
C9 18P
R8 2K
C11 33P
C13 100P
C12 68P
T1
fs: 5.5MHz
T2
C14 5P
R10 68
R7 47
R11 220
R51 2.2K
R53 390
C51 18P
C52 51P
R52 3.3K
C53 1P
L51
Q1 2SC684
VC1
C55 5P
RF OUT
To RF BOOSTER
TSG SWITCH
OFF
ON
TSG AMP
OSC
CL1
C16 4700P
C15 4700P
C17 10/16
RF CONVERTER P.C.B

TUNER PACK [Except for UK model]


TUNER PACK
TP1
TP2
TP3
TP4
TR1 3SK88
TR2 2SC2736
TR3 2SC2734
TR4 3SK81
TR5 2SC2735
TR6 2SC2735
TR7 2SC2735
D9 1SS110
D10 1SS110
D11 1SS110
D12 1SS110
D5 1T25
D6 1T25
D7 1T25
D181/2 1S2835
D171/2 1S2837
D1 1T25
D2 1T25
D3 1T25
D4 1T25
D8 1T25
D13 1SS110
D14 1SV89
D15 1SV89
D16 HZ9A
IFT
IF OUT
R33 33K
C73 22p
R49 4.7K
R16 1.2K
TUNER PACK P.C.B
AFT
AGC
UB
TU
HB
LB
MB
C89
C90
C91
C92
C93
C94
C95
To TUNER/IF P.C.B

IF [Except for UK model]


AGC
VR801
R812
C812
C813
C814
R813
L804
C811
C825
C826
C827
C816
R816
F803
IC803
R815
R814
R817
C817
C815
C818
TP3
C810
C819
T802
V-DET
C805
IC801
R811
C822
IC802
C824
TP4
AFT
T803
T804
SIF
C823
L801
TP1
R808
C820
TP2
L803
C809
V-DET
VT802
R818
C804
C808
C807
L802
C806
R806
R809
R810
Q802
R807
R821
R805
C802
T801
VIF
L806
F802
R819
L805
R803
R801
FR172
F801
C821
R820
R823
Q803
C803
R804
Q801
R802
C801
R822
IF PACK P.C.B
① AGC
② IF
③ GND
④ VIDEO
⑤ GND
⑥ PB12V
⑦ AUDIO
⑧ DEFEAT
⑨ AFS1
⑩ AFS2
TUNER / IF P.C.B

IC 801

1	2	3	4	5	6	7	8
4.4	4.5	6.4	6.8	6.8	6.7	4.2	8.0
16	15	14	13	12	11	10	9
4.5	4.5	11.2	0.6	5.0	11.7	4.2	8.0

IC 802

1	2	3	4	5	6	7
1.9	1.9	0	0	10.3	1.3	7.2
14	13	12	11	10	9	8
0	0	0	0.3	3.6	3.6	6.2

IC 803

1	2	3	4	5	6	7	8	9	10
1.9	1.9	0	0	10.3	1.3	0.9	2.1	6.2	11.8

Q801

B	1.2
C	1.1
E	0.4

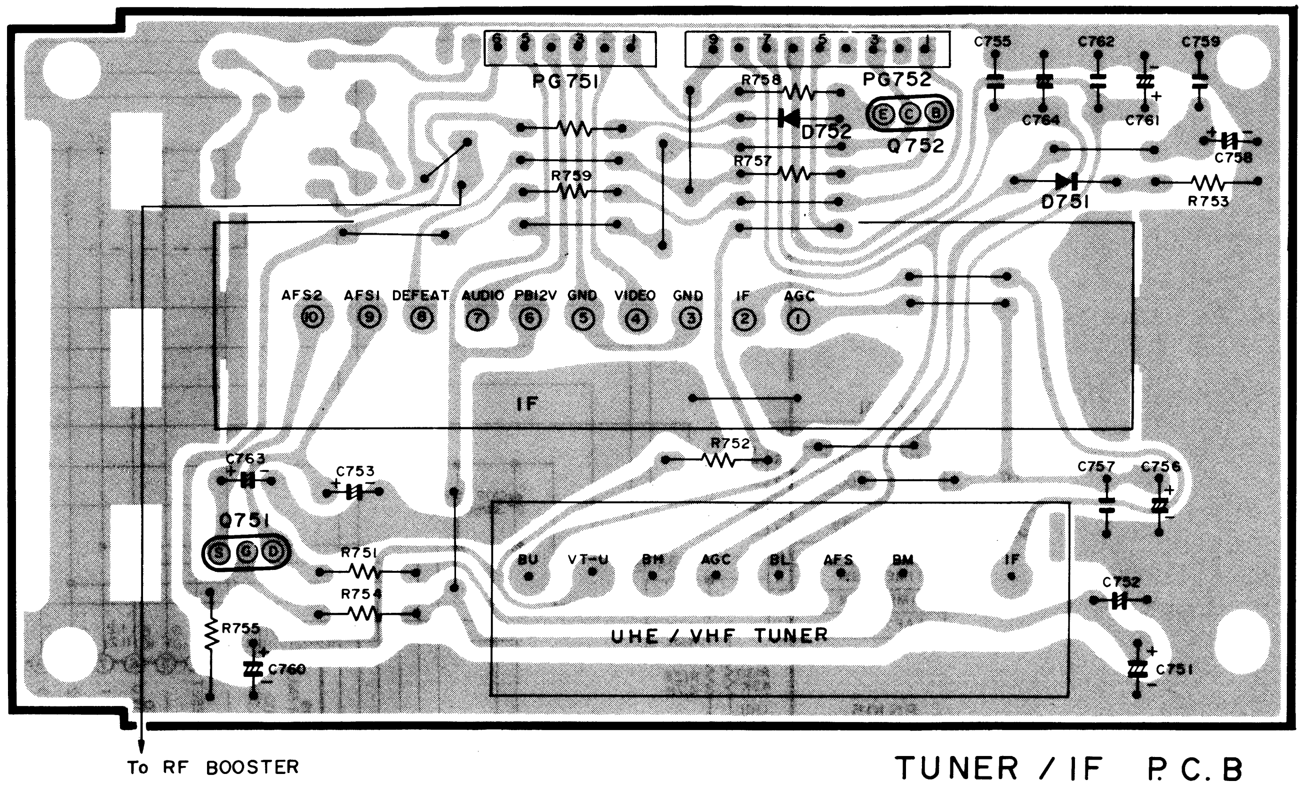
Q802

B	3.2
C	0
E	3.8

Q803

B	3.8
C	10.1
E	3.1

TUNER IF [Except for UK model]


PG751
PG752
C755
C762
C759
R758
D752
Q752
C764
C761
R757
C758
D751
R753
R759
AFS2 ⑩
AFSI ⑨
DEFEAT ⑧
AUDIO ⑦
PBI2V ⑥
GND ⑤
VIDEO ④
GND ③
IF ②
AGC ①
IF
R752
C763
C753
C757
C756
Q751
R751
R754
BU
VT-U
BH
AGC
BL
AFS
BM
IF
C752
R755
C760
UHF / VHF TUNER
C751
To RF BOOSTER
TUNER / IF P.C.B

PG 752

1	AFS 1
2	AFS 2
3	$\overline{\text{PB}}$ 12V
4	GND
5	VT
6	BU
7	BL
8	BH
9	DEFEAT

To
PROGRAMME
PRESET
PG1756

PG751

1	GND
2	VIDEO
3	GND
4	AUDIO
5	$\overline{\text{PB}}$12V
6	12V

To
Y/CHROMA
PG032
VIA
CN032

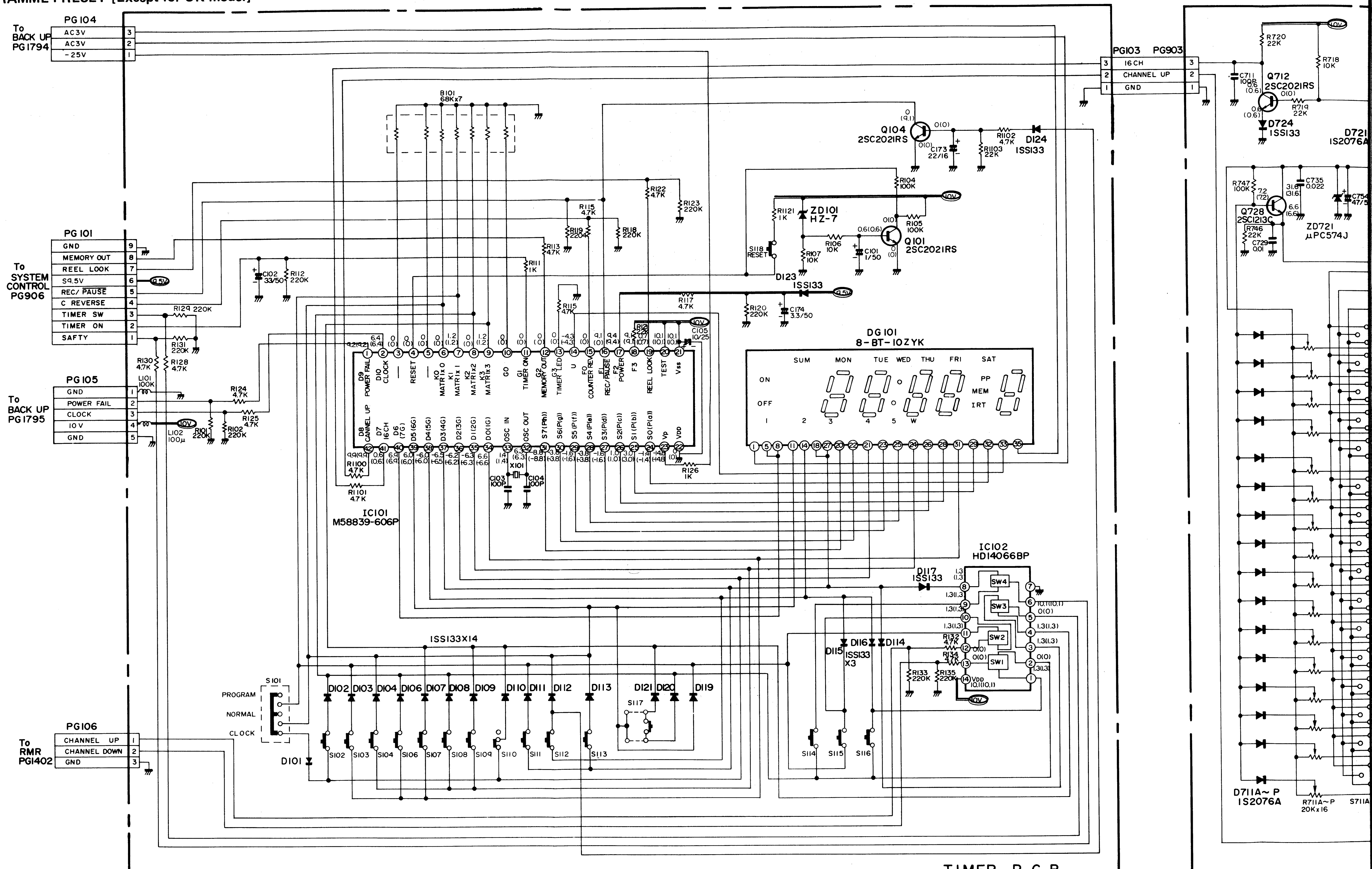
Q751

S	6.8
D	6.8
G	5.9

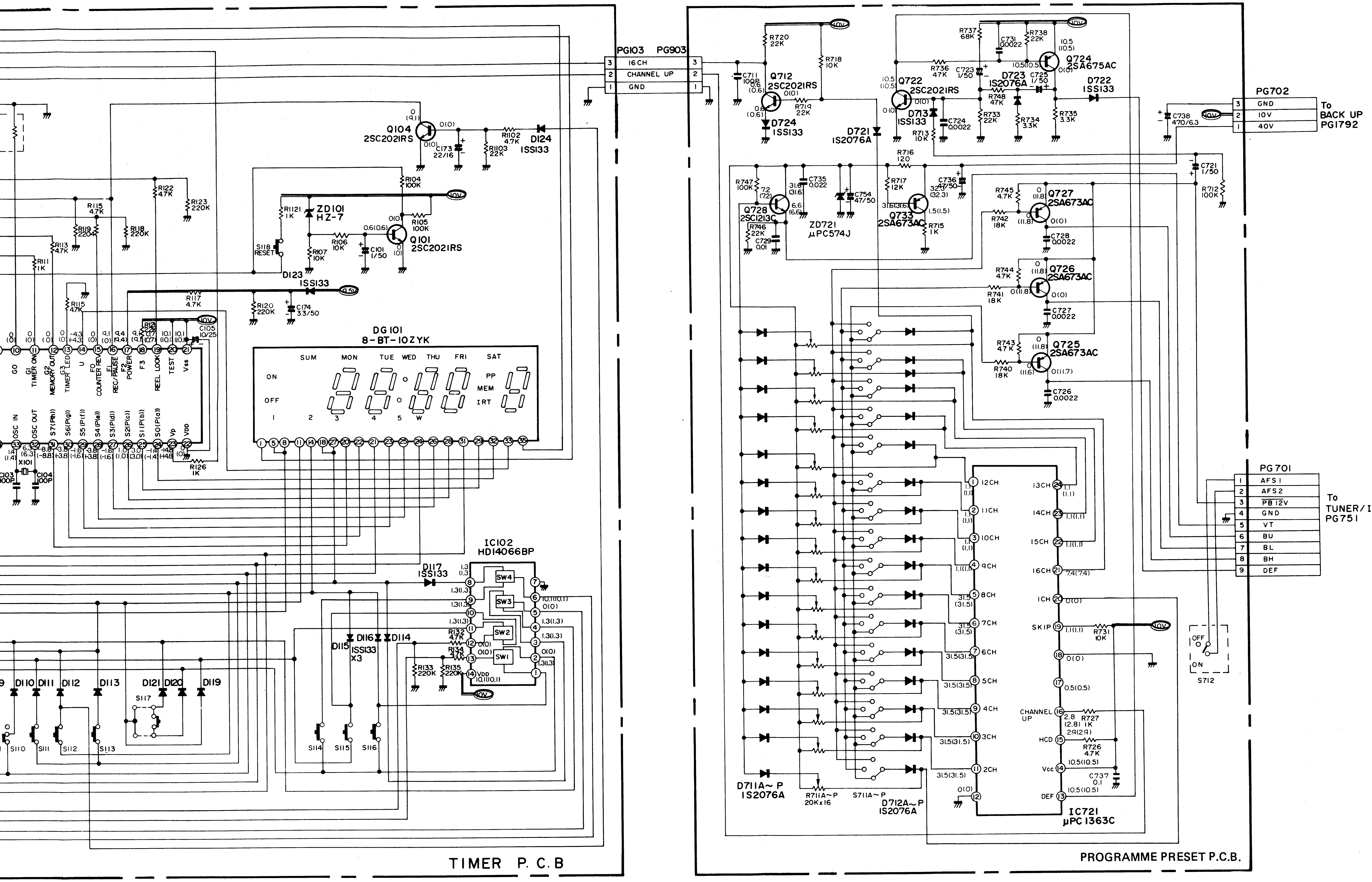
Q752

B	0.9
C	11.8
E	0.3

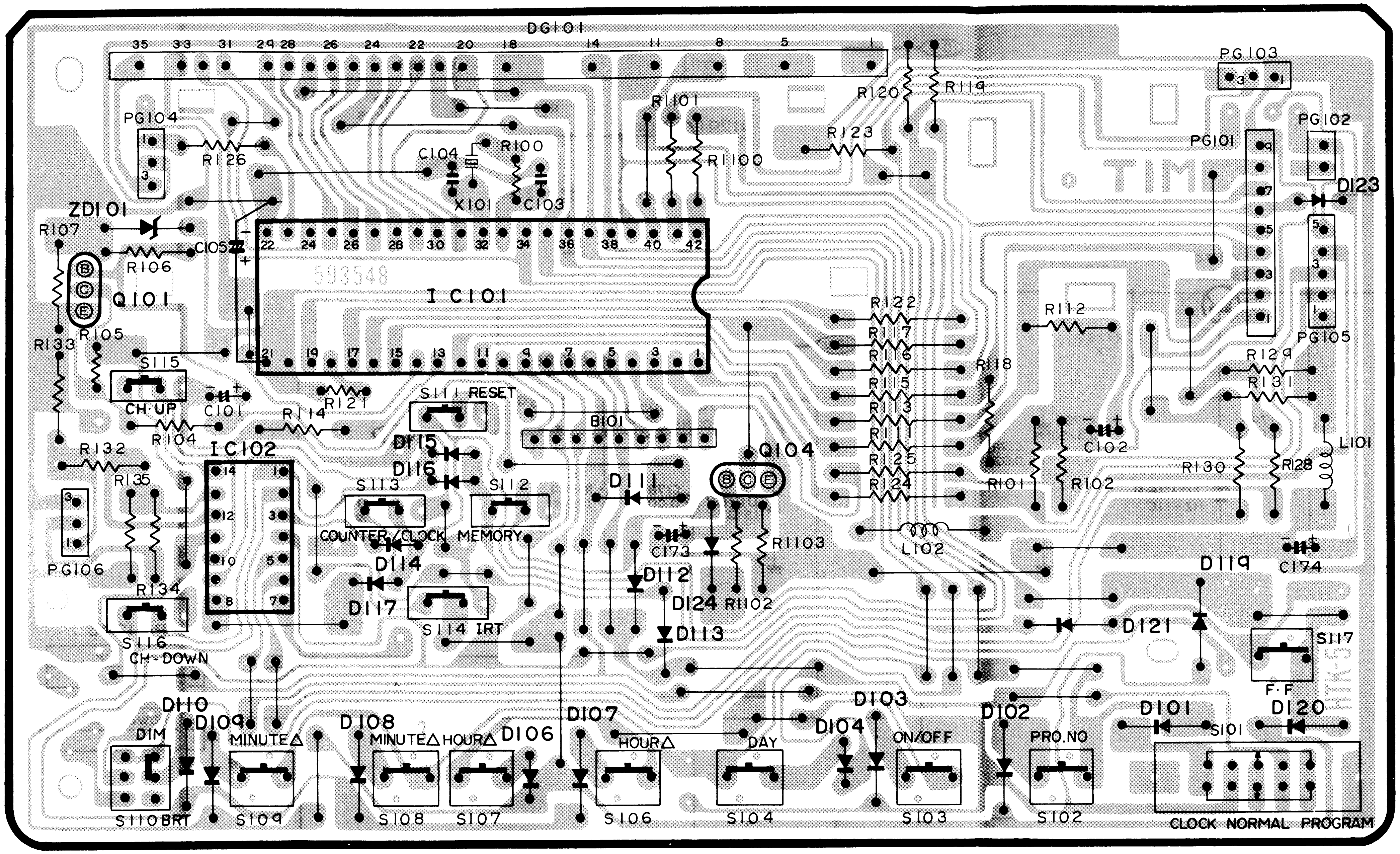
TIMER/PROGRAMME PRESET [Except for UK model]


To BACK UP PG1794
PG104
AC3V
AC3V
-25V
To SYSTEM CONTROL PG906
PG101
GND
MEMORY OUT
REEL LOOK
S9.5V
REC/ PAUSE
C REVERSE
TIMER SW
TIMER ON
SAFTY
To BACK UP PG1795
PG105
GND
POWER FAIL
CLOCK
10 V
GND
To RMR PG1402
PG106
CHANNEL UP
CHANNEL DOWN
GND
PG103 PG903
16CH
CHANNEL UP
GND
B101 68Kx7
Q104 2SC2021RS
D124 1SS133
R1102 4.7K
R1103 22K
C173 22/16
R104 100K
R1121 1K
ZD101 HZ-7
R105 100K
Q101 2SC2021RS
R106 10K
C101 1/50
R107 10K
S118 RESET
D123 1SS133
R117 4.7K
R120 220K
C174 3.3/50
R122 4.7K
R123 220K
R115 4.7K
R119 220K
R118 220K
R113 4.7K
R111 1K
R116 4.7K
C102 33/50
R112 220K
R129 220K
R131 220K
R130 4.7K
R128 4.7K
L101 100K
R124 4.7K
R125 4.7K
L102 100μ
R101 220K
R102 220K
C105 10/25
R126 1K
R1100 4.7K
R1101 4.7K
C103 100P
X101
C104 100P
IC101 M58839-606P
D9 POWER FAIL
D10 CLOCK
RESET
K0 MATRIX 0
K1 MATRIX 1
K2 MATRIX 2
K3 MATRIX 3
G0
G1 TIMER ON
G2 MEMORY OUT
G3 TIMER LED
U
F0 COUNTER REV
F1 REC/PAUSE
F2 POWER
F3
REEL LOOK
TEST
Vss
D8 CANNEL UP
D7 16CH
D6 (7G)
D5 (6G)
D4 (5G)
D3 (4G)
D2 (3G)
D1 (2G)
D0 (1G)
OSC IN
OSC OUT
S7 (Ph)
S6 (Pg)
S5 (Pf)
S4 (Pe)
S3 (Pd)
S2 (Pc)
S1 (Pb)
S0 (Pa)
Vp
VDD
DG101 8-BT-10ZYK
SUM
MON
TUE
WED
THU
FRI
SAT
ON
OFF
PP
MEM
IRT
IC102 HD14066BP
SW1
SW2
SW3
SW4
D117 1SS133
D115 D116 D114 1SS133 X3
R132 4.7K
R134 4.7K
R133 220K
R135 220K
VDD
1SS133X14
S101
PROGRAM
NORMAL
CLOCK
D101
D102
D103
D104
D106
D107
D108
D109
D110
D111
D112
D113
D121
D120
D119
S102
S103
S104
S106
S107
S108
S109
S110
S111
S112
S113
S117
S114
S115
S116
TIMER P.C.B
R720 22K
R718 10K
C711 100P
Q712 2SC2021RS
R719 22K
D724 1SS133
D721 1S2076A
R747 100K
C735 0.022
Q728 2SC1213C
R746 22K
C729 0.01
C754 47/5
ZD721 μPC574J
D711A~P 1S2076A
R711A~P 20Kx16
S711A
10V
9.5V

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND VOLTAGES IN( ) ARE MEASURED IN RECORED MODE.


PG103 PG903
16CH
CHANNEL UP
GND
Q104 2SC2021RS
C173 22/16
R1102 4.7K
R1103 22K
D124 1SS133
R122 4.7K
R123 220K
R1104 100K
10V
R1121 1K
ZD101 HZ-7
R105 100K
R106 10K
R107 10K
C101 1/50
Q101 2SC2021RS
S118 RESET
D123 1SS133
R115 4.7K
R119 220K
R118 220K
R113 4.7K
R111 1K
R117 4.7K
9.5V
R120 220K
C174 3.3/50
C105 10/25
R126 1K
X101
C103 100P
C104 100P
G0
G1 TIMER ON
G2 MEMORY OUT
G3 TIMER LED
U
F0 COUNTER REV
F1 REC/PAUSE
F2 POWER
F3
REEL LOOK
TEST
Vss
OSC IN
OSC OUT
S7(P(h))
S6(P(g))
S5(P(f))
S4(P(e))
S3(P(d))
S2(P(c))
S1(P(b))
S0(P(a))
Vp
VDD
DG101 8-BT-10ZYK
SUN MON TUE WED THU FRI SAT
ON
OFF
PP
MEM
IRT
IC102 HD14066BP
SW1 SW2 SW3 SW4
D117 1SS133
D115 D116 D114 1SS133 X3
R132 4.7K
R134 4.7K
R133 220K
R135 220K
VDD
D110 D111 D112 D113 D121 D120 D119
S117
S110 S111 S112 S113 S114 S115 S116
TIMER P.C.B
R720 22K
R718 10K
C711 100P
Q712 2SC2021RS
R719 22K
D724 1SS133
D721 1S2076A
R737 68K
C731 0.0022
R738 22K
Q724 2SA675AC
R736 47K
C723 1/50
C725 1/50
Q722 2SC2021RS
D723 1S2076A
D722 1SS133
R748 47K
R733 22K
R734 3.3K
R735 3.3K
D713 1SS133
C724 0.0022
R713 10K
C738 470/6.3
PG702
GND
10V
40V
To BACK UP PG1792
R716 120
R747 100K
C735 0.022
C754 47/50
R717 12K
C736 47/50
Q728 2SC1213C
Q733 2SA673AC
R715 1K
R746 22K
C729 0.01
ZD721 µPC574J
C721 1/50
R712 100K
R745 4.7K
Q727 2SA673AC
R742 18K
C728 0.0022
R744 4.7K
Q726 2SA673AC
R741 18K
C727 0.0022
R743 4.7K
Q725 2SA673AC
R740 18K
C726 0.0022
PG701
AFS1
AFS2
PB 12V
GND
VT
BU
BL
BH
DEF
To TUNER/IF PG751
12CH 11CH 10CH 9CH 8CH 7CH 6CH 5CH 4CH 3CH 2CH
13CH 14CH 15CH 16CH 1CH
SKIP
R731 10K
CHANNEL UP
R727 1K
HCD
R726 4.7K
Vcc
C737 0.1
DEF
IC721 µPC1363C
S712
OFF
ON
D711A~P 1S2076A
R711A~P 20K×16
S711A~P
D712A~P 1S2076A
PROGRAMME PRESET P.C.B.

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND VOLTAGES IN( ) ARE MEASURED IN RECORED MODE.


DG101
35
33
31
29
28
26
24
22
20
18
14
11
8
5
1
PG104
R126
C104
R100
X101
C103
R1101
R1100
R120
R119
R123
PG103
PG101
PG102
D123
PG105
ZD101
R107
R106
C105
Q101
B
C
E
IC101
593548
22
24
26
28
30
32
34
36
38
40
42
21
19
17
15
13
11
9
7
5
3
1
R133
R105
S115
CH·UP
C101
R121
R114
R104
S111 RESET
B101
R132
R135
IC102
D115
D116
S113
S112
D111
Q104
PG106
COUNTER/CLOCK
MEMORY
C173
R1103
L102
D114
D112
D124
R1102
D117
S114 IRT
D113
R134
S116
CH-DOWN
R122
R117
R116
R115
R113
R111
R125
R124
R118
R101
R102
C102
R112
R129
R131
R130
R128
L101
D119
C174
D121
S117
F·F
D110
D109
D108
D107
D106
D103
D104
D102
D101
D120
S101
DIM
MINUTE△
HOUR△
DAY
ON/OFF
PRO.NO
S110 BRT
S109
S108
S107
S106
S104
S103
S102
CLOCK NORMAL PROGRAM

TIMER P.C.B

IC101

22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
0 (0)	-14.8(-14.8)	-1.4(-1.4)	3.0(3.0)	1.0(1.0)	-1.6(-1.6)	-3.8(-3.8)	-1.6(-1.6)	-3.8(-3.8)	-8.8(-8.8)	6.3(6.3)	1.4(1.4)	-6.6(-6.6)	-6.3(-6.3)	-6.2(-6.2)	-6.5(-6.5)	-6.0(-6.0)	6.0(6.0)	6.9(6.9)	0.6(0.6)	9.9(9.9)
21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
10.1(10.1)	10.1(10.1)	0.7(0.7)	9.1(9.1)	9.4(9.4)	0 (9.1)	0 (0)	-4.3(-4.3)	0 (0)	0 (0)	0 (0)	0 (0)	1.2(1.2)	0 (0)	1.2(1.2)	0 (0)	0 (0)	0 (0)	0 (0)	6.4(6.4)	9.2(9.2)

IC102

14	10.1 (10.1)	1	1.3 (1.3)
13	0 (0)	2	0 (0)
12	0 (0)	3	1.3 (1.3)
11	1.3 (1.3)	4	1.3 (1.3)
10	1.3 (1.3)	5	0 (0)
9	1.3 (1.3)	6	10.1 (10.1)
8	1.3 (1.3)	7	0 (0)

Q101

B	0.6 (0.6)
C	0 (0)
E	0 (0)

Q104

B	0 (0)
C	0 (9.1)
E	0 (0)

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.

PG101

9	GND
8	MEMORY OUT
7	REEL LOCK
6	S9.5V
5	PEC/PAUSE
4	C.REVERSE
3	TIMER SW
2	TIMER ON
1	SAFTY

To
SYSTEM CONTROL
PG906

PG104

1	-25V
2	AC3V
3	AC3V

To
BACK UP
PG1794

PG106

3	GND
2	CHANNEL DOWN
1	CHANNEL UP

To
RMR
PG1402

PG103

1	GND
2	CHANNEL UP
3	16CH

To
CHANNEL PRESET
PG703

PG102

2	BACK UP
1	———

To
SYSTEM CONTROL
PG909

PG105

5	GND
4	10V
3	CLOCK
2	POWER FAIL
1	GND

To
BACK UP
PG1795

PG703

3	16CH
2	CHANNEL UP
1	GND

TO
TIMER
PG103

PG702

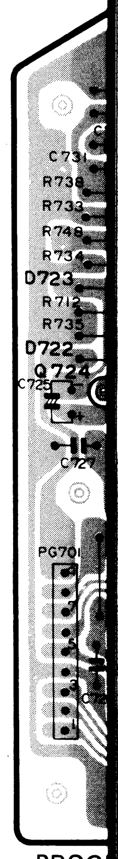
3	GND
2	10V
1	40V

TO
BACK UP
PG1792

PG701

9	DEF
8	BH
7	BL
6	BU
5	VT
4	GND
3	$\overline{\text{PB12V}}$
2	AFS2
1	AFS1

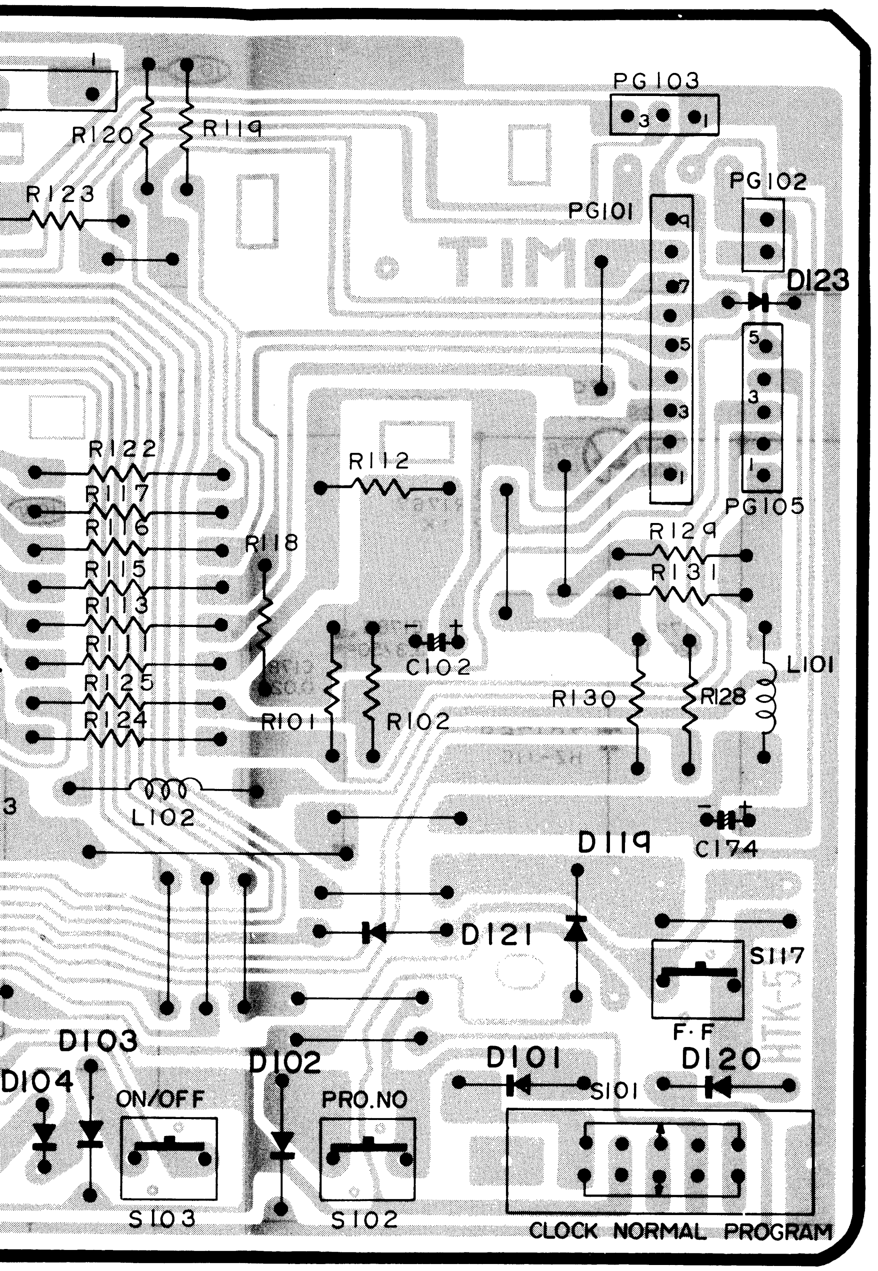
TO
TUNER/IF
PG752


C731
R738
R733
R748
R734
D723
R712
R735
D722
Q724
C725
C727
PG701

PROG

IC721

1	2	3	4	5	6	7
1.1(1.1)	1.1(1.1)	1.1(1.1)	1.1(1.1)	31.5(31.5)	31.5(31.5)	31.5(31.5)
24	23	22	21	20	19	18
1.1(1.1)	1.1(1.1)	1.1(1.1)	7.4(7.4)	0(0)	1.1(1.1)	0(0)


R120
R119
R123
PG103
PG102
PG101
D123
R122
R117
R116
R115
R113
R111
R125
R124
R112
R118
R101
R102
C102
R129
R131
PG105
L101
R130
R128
L102
C174
D119
D121
S117
F·F
D103
D104
ON/OFF
D102
PRO.NO
D101
S101
D120
S103
S102
CLOCK NORMAL PROGRAM

TIMER P.C.B

	35	36	37	38	39	40	41	42
6)	-6.3(-6.3)	-6.2(-6.2)	-6.5(-6.5)	-6.0(-6.0)	6.0(6.0)	6.9(6.9)	0.6(0.6)	9.9(9.9)
	8	7	6	5	4	3	2	1
2)	0 (0)	1.2(1.2)	0 (0)	0 (0)	0 (0)	0 (0)	6.4(6.4)	9.2(9.2)

ES ARE MEASURED IN PLAY MODE, AND
ES IN ( ) ARE MEASURED IN RECORED MODE.

PG101

9	GND
8	MEMORY OUT
7	REEL LOCK
6	S9.5V
5	PEC/PAUSE
4	C. REVERSE
3	TIMER SW
2	TIMER ON
1	SAFTY

To
SYSTEM CONTROL
PG906

PG104

1	-25V
2	AC3V
3	AC3V

To
BACK UP
PG1794

PG106

3	GND
2	CHANNEL DOWN
1	CHANNEL UP

To
RMR
PG1402

PG103

1	GND
2	CHANNEL UP
3	16CH

To
CHANNEL PRESET
PG703

PG102

2	BACK UP
1	———

To
SYSTEM CONTROL
PG909

PG105

5	GND
4	10V
3	CLOCK
2	POWER FAIL
1	GND

To
BACK UP
PG1795

PG703

3	16CH
2	CHANNEL UP
1	GND

TO
TIMER
PG103

PG702

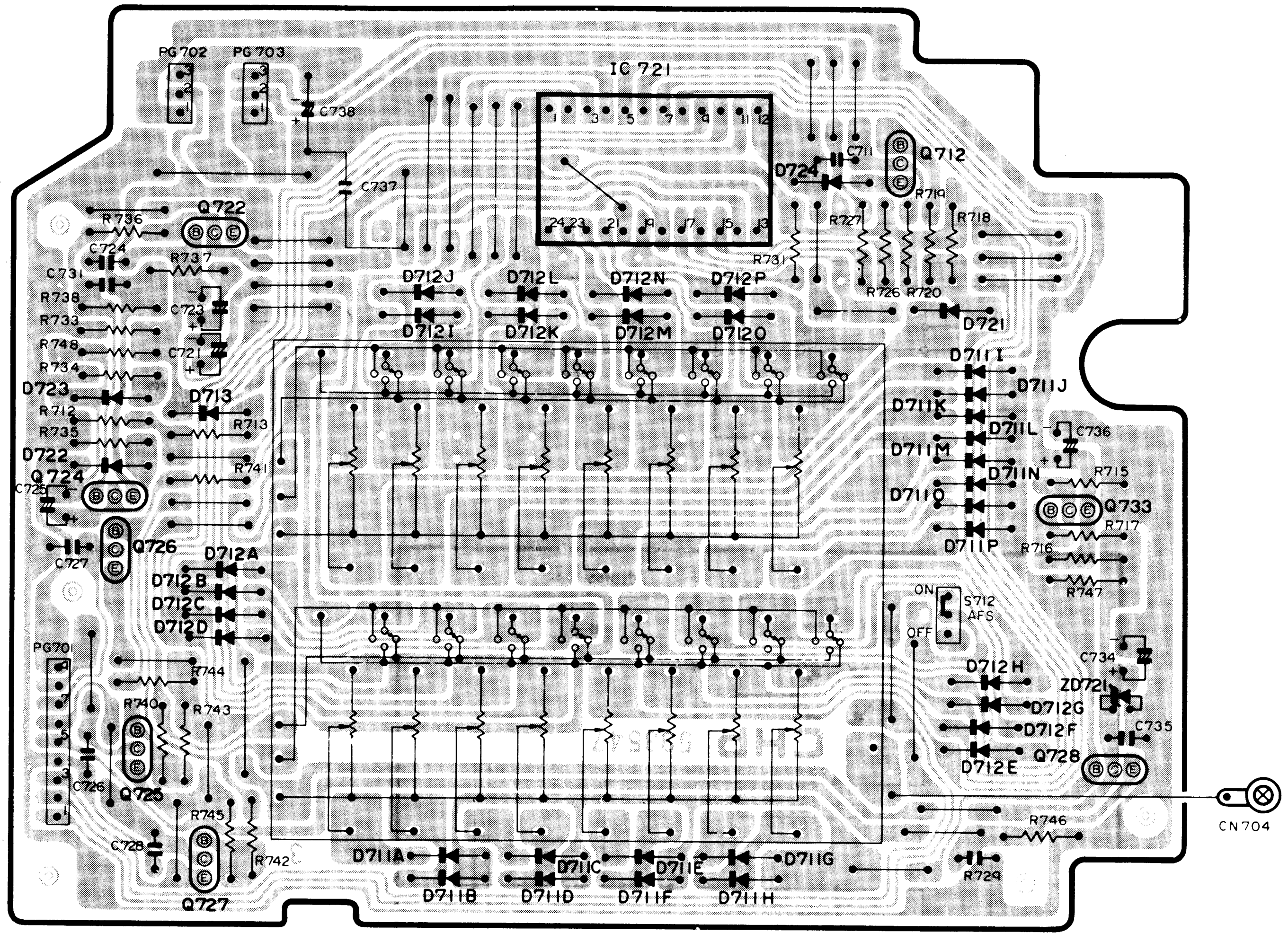
3	GND
2	10V
1	40V

TO
BACK UP
PG1792

PG701

9	DEF
8	BH
7	BL
6	BU
5	VT
4	GND
3	$\overline{\text{PB12V}}$
2	AFS2
1	AFS1

TO
TUNER/IF
PG752


PG702
PG703
C738
IC721
C737
Q712
D724
C711
R719
R718
R727
R736
Q722
C731
C724
R737
R738
R733
C723
R748
C721
R734
D723
D713
R712
R713
R735
D722
R741
Q724
C725
Q726
C727
D712A
D712B
D712C
D712D
D712J
D712L
D712N
D712P
D712I
D712K
D712M
D712O
R731
R726
R720
D721
D711I
D711J
D711K
D711L
C736
D711M
D711N
R715
D711O
Q733
R717
R716
D711P
R747
ON
OFF
S712
AFS
PG701
R744
R740
R743
C734
D712H
ZD721
D712G
D712F
C735
Q728
D712E
C726
Q725
R745
R746
CN704
C728
R742
D711A
D711B
D711C
D711D
D711E
D711F
D711G
D711H
R729
Q727

PROGRAMME PRESET P.C.B.

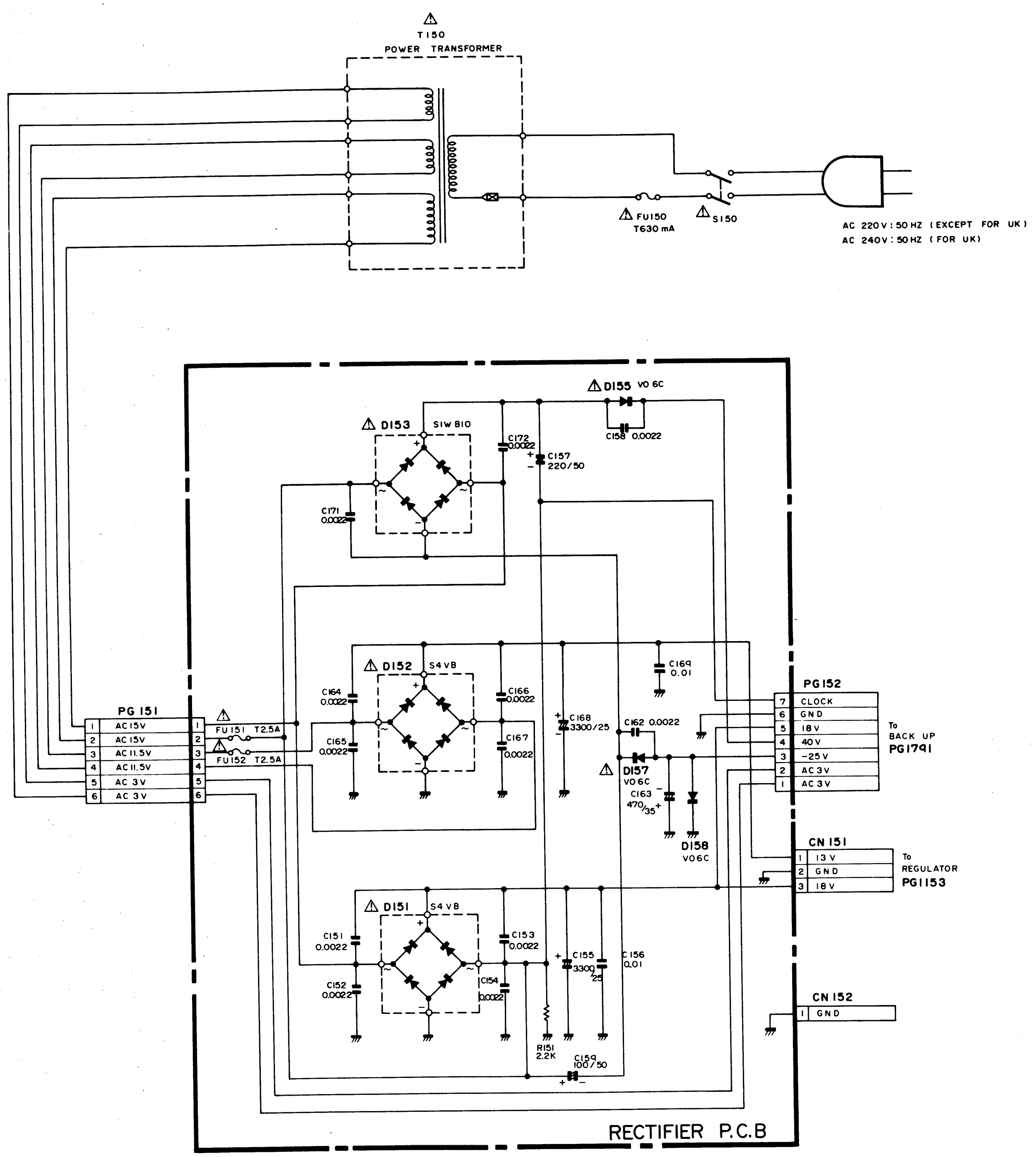
IC721

1	2	3	4	5	6	7	8	9	10	11	12
1.1(1.1)	1.1(1.1)	1.1(1.1)	1.1(1.1)	31.5(31.5)	31.5(31.5)	31.5(31.5)	31.5(31.5)	31.5(31.5)	31.5(31.5)	31.5(31.5)	0(0)
24	23	22	21	20	19	18	17	16	15	14	13
1.1(1.1)	1.1(1.1)	1.1(1.1)	7.4(7.4)	0(0)	1.1(1.1)	0(0)	0.5(0.5)	2.8(2.8)	2.9(2.9)	10.5(10.5)	10.5(10.5)

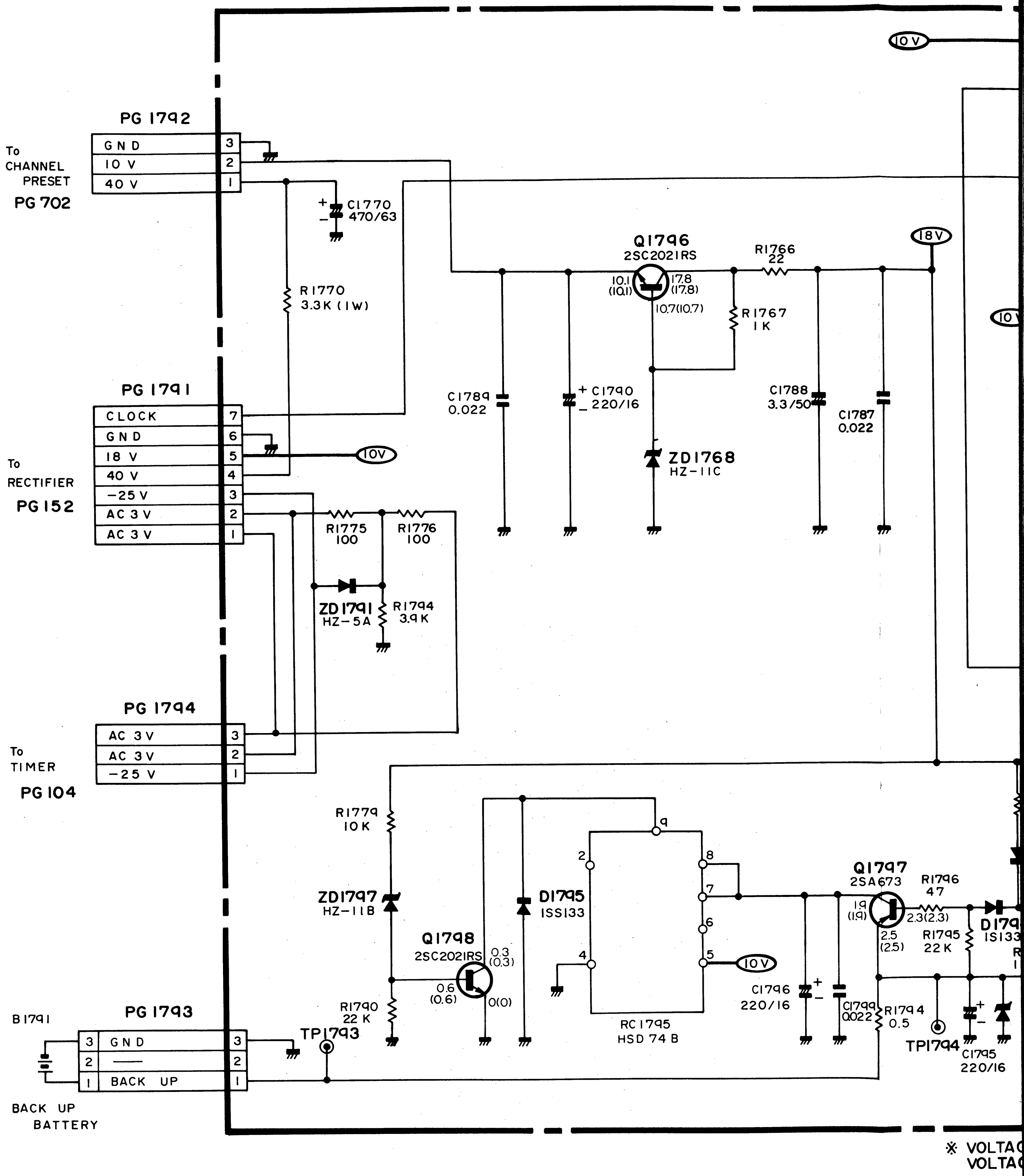
	Q712	Q722	Q724	Q725	Q726	Q727	Q728	Q733
B	0(0)	0(0)	10.5(10.5)	0(11.6)	0(11.8)	0(11.8)	7.2(7.2)	31.6(31.6)
C	0.6(0.6)	10.5(10.5)	0(0)	0(11.7)	0(0)	0(0)	31.6(31.6)	1.5(1.5)
E	0.6(0.6)	0(0)	10.5(10.5)	0(11.8)	0(11.8)	0(11.8)	6.6(6.6)	32.3(32.3)

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN( ) ARE MEASURED IN RECORED MODE.

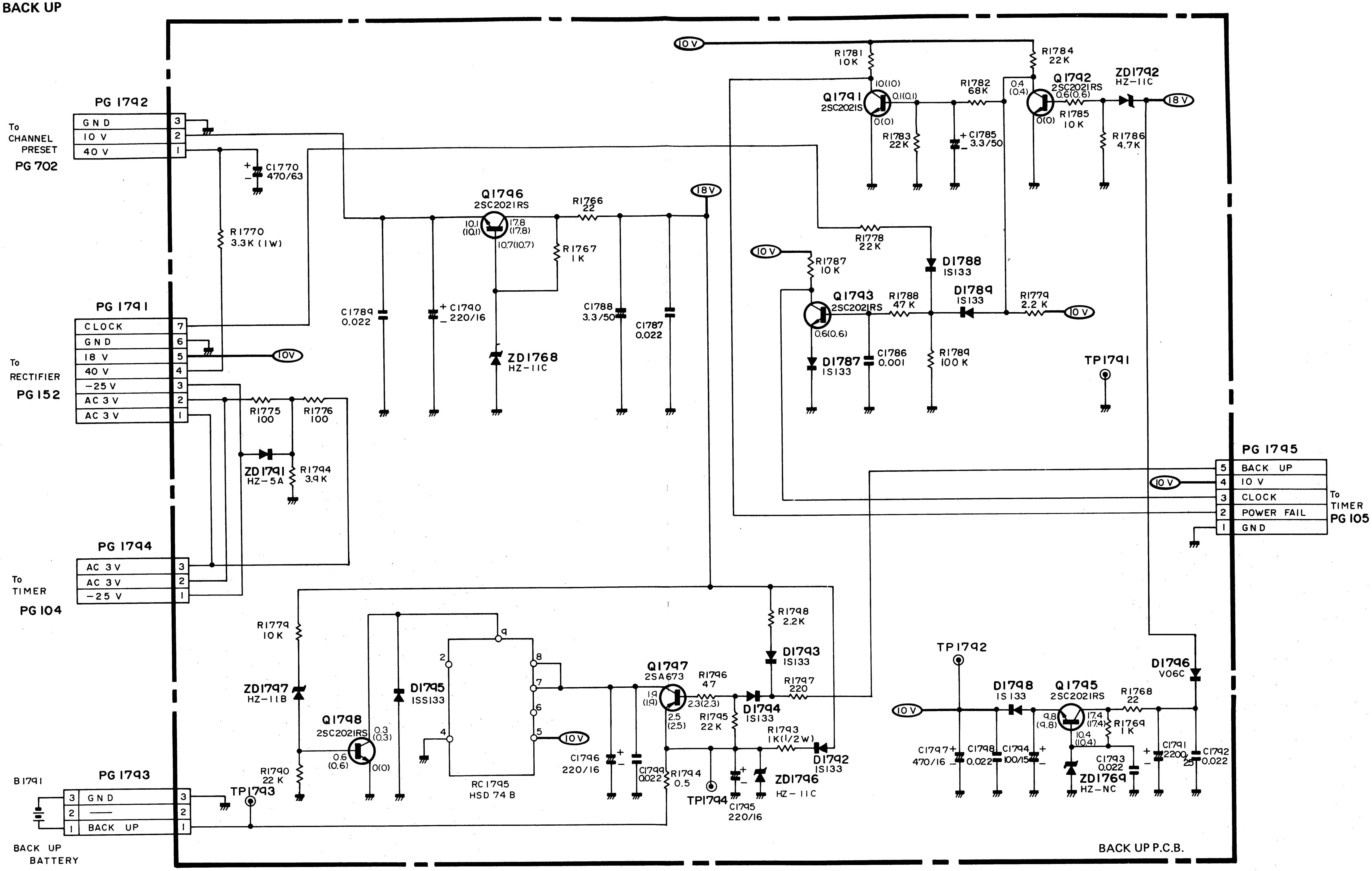
RECTIFIER


T150
POWER TRANSFORMER
FU150
T630 mA
S150
AC 220V : 50HZ (EXCEPT FOR UK)
AC 240V : 50HZ (FOR UK)
D155 V0 6C
C158 0.0022
D153 SIW B10
C172 0.0022
C157 220/50
C171 0.0022
D152 S4 VB
C164 0.0022
C165 0.0022
C166 0.0022
C167 0.0022
C168 3300/25
C169 0.01
C162 0.0022
D157 V0 6C
C163 470/35
D158 V06C
PG 151
AC 15V
AC 15V
AC 11.5V
AC 11.5V
AC 3V
AC 3V
FU151 T2.5A
FU152 T2.5A
PG152
CLOCK
GND
18 V
40 V
-25 V
AC 3 V
AC 3 V
To BACK UP PG1791
CN 151
13 V
GND
18 V
To REGULATOR PG1153
D151 S4 VB
C151 0.0022
C152 0.0022
C153 0.0022
C154 0.0022
C155 3300/25
C156 0.01
R151 2.2K
C159 100/50
CN 152
GND
RECTIFIER P.C.B

BACK UP


To CHANNEL PRESET PG 702
PG 1792
GND
10 V
40 V
C1770 470/63
R1770 3.3K (1W)
Q1796 2SC2021RS
10.1 (10.1)
17.8 (17.8)
10.7 (10.7)
R1766 22
R1767 1K
18V
10V
C1789 0.022
C1790 220/16
ZD1768 HZ-11C
C1788 3.3/50
C1787 0.022
To RECTIFIER PG152
PG 1791
CLOCK
GND
18 V
40 V
-25 V
AC 3 V
AC 3 V
10V
R1775 100
R1776 100
ZD1791 HZ-5A
R1794 3.9K
To TIMER PG104
PG 1794
AC 3V
AC 3V
-25 V
R1779 10K
ZD1797 HZ-11B
D1795 1SS133
Q1798 2SC2021RS
0.3 (0.3)
0.6 (0.6)
0(0)
R1790 22 K
RC1795 HSD 74 B
10V
Q1797 2SA673
19 (19)
2.3 (2.3)
2.5 (2.5)
R1796 47
R1795 22 K
D179
1S133
C1796 220/16
C1799 0.022
R1794 0.5
TP1794
C1795 220/16
B1791
PG 1793
GND
BACK UP
TP1793
BACK UP BATTERY
※ VOLTA
VOLTA

BACK UP



PG 1792
GND
10 V
40 V
To CHANNEL PRESET
PG 702
C1770 470/63
R1770 3.3K (1W)
PG 1791
CLOCK
GND
18 V
40 V
-25 V
AC 3 V
AC 3 V
To RECTIFIER
PG 152
10V
R1775 100
R1776 100
ZD1791 HZ-5A
R1794 3.9K
PG 1794
AC 3 V
AC 3 V
-25 V
To TIMER
PG 104
Q1796 2SC2021RS
10.1 (10.1)
17.8 (17.8)
10.7(10.7)
R1766 22
R1767 1K
18V
C1789 0.022
C1790 220/16
ZD1768 HZ-11C
C1788 3.3/50
C1787 0.022
10V
R1781 10K
R1784 22K
Q1791 2SC2021S
10(10)
0.1(0.1)
0(0)
R1782 68K
0.4 (0.4)
Q1792 2SC2021RS
0.6(0.6)
0(0)
R1785 10K
ZD1792 HZ-11C
18V
R1783 22K
C1785 3.3/50
R1786 4.7K
R1778 22K
10V
R1787 10K
D1788 1S133
Q1793 2SC2021RS
R1788 47K
D1789 1S133
R1779 2.2K
10V
0.6(0.6)
D1787 1S133
C1786 0.001
R1789 100K
TP1791
PG 1795
BACK UP
10 V
CLOCK
POWER FAIL
GND
10V
To TIMER
PG 105
R1779 10K
ZD1797 HZ-11B
Q1798 2SC2021RS
0.3 (0.3)
0.6 (0.6)
0(0)
D1795 1SS133
R1790 22K
RC1795 HSD 74 B
9
2
8
7
6
4
5
10V
C1796 220/16
C1799 0.022
Q1797 2SA673
1.9 (1.9)
2.5 (2.5)
2.3(2.3)
R1796 47
R1798 2.2K
D1793 1S133
R1797 220
D1794 1S133
R1795 22K
R1793 1K(1/2W)
R1794 0.5
D1792 1S133
ZD1796 HZ-11C
TP1794
C1795 220/16
TP1793
B1791
PG 1793
GND
——
BACK UP
BACK UP BATTERY
TP1792
D1798 1S133
Q1795 2SC2021RS
9.8 (9.8)
17.4 (17.4)
10.4 (10.4)
R1768 22
R1769 1K
D1796 V06C
10V
C1797 470/16
C1798 0.022
C1794 100/15
C1793 0.022
ZD1769 HZ-NC
C1791 2200 25
C1792 0.022
BACK UP P.C.B.

※ VOLTAGES ARE MESORER IN PLAY MODE, AND
VOLTAGES IN ( )ARE MEASURED IN RECORED MODE.

CN151

3	18V
2	GND
1	13V

To
REGUATOR
PG1153

PG151

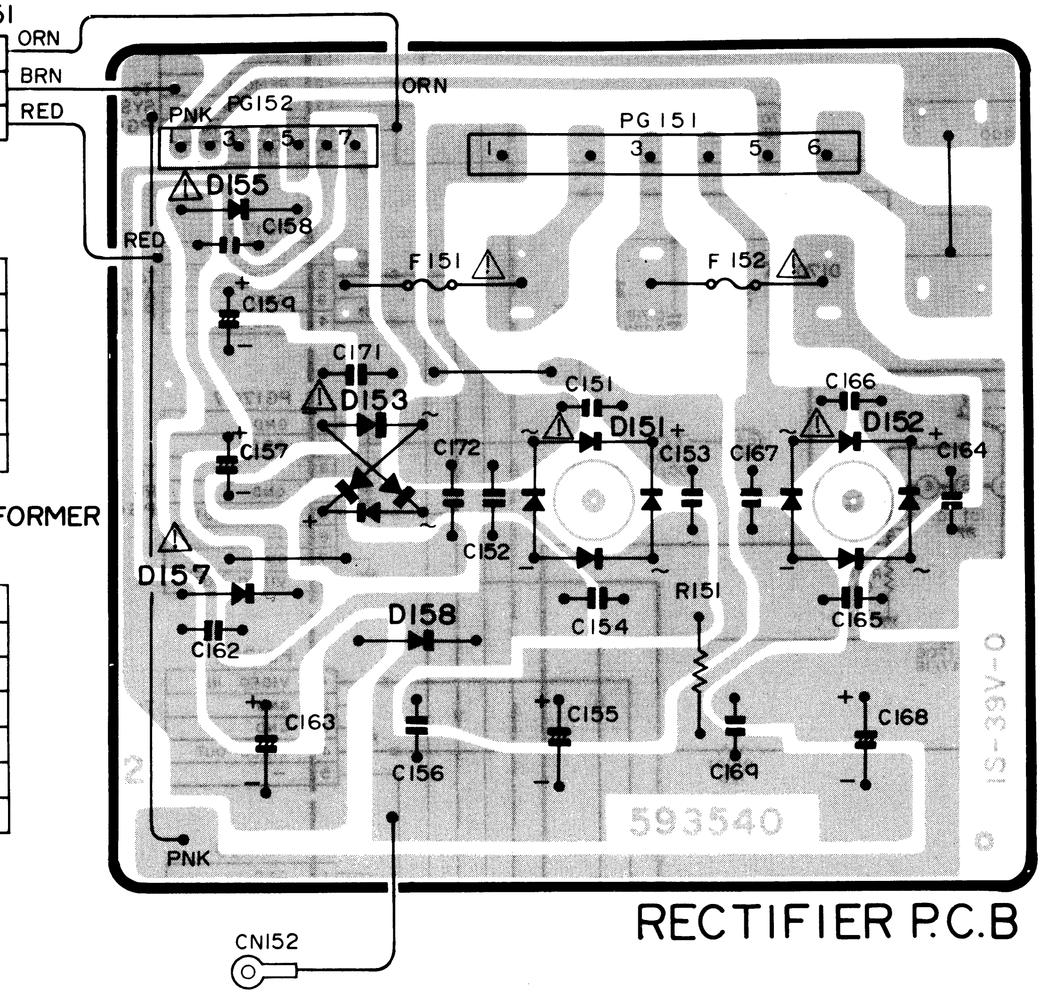
1	AC15V
2	AC15V
3	AC11.5V
4	AC11.5V
5	AC3V
6	AC3V

To
POWER TRANSFORMER

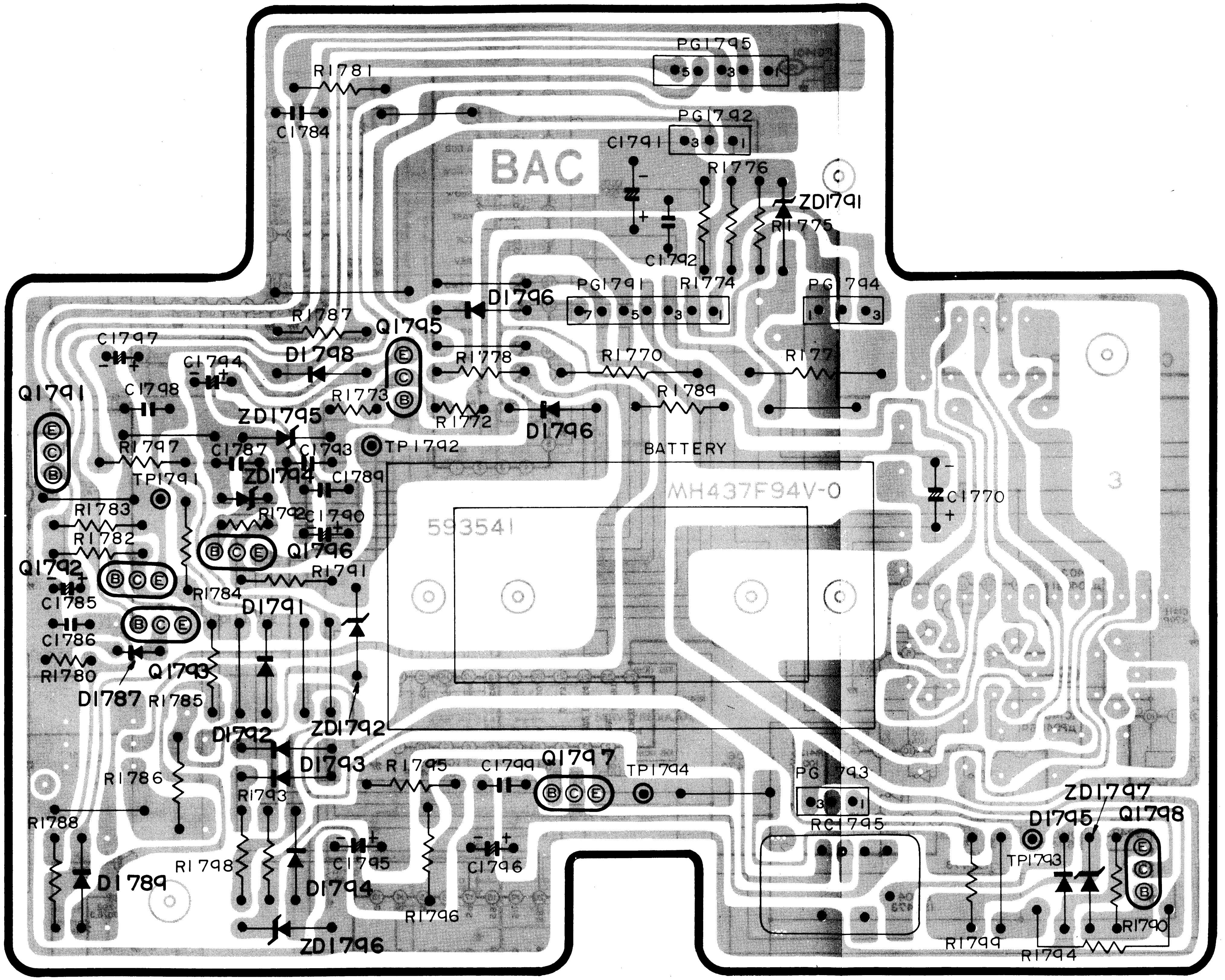
PG152

1	AC3V
2	AC3V
3	−25V
4	40V
5	18V
6	GND
7	CLOCK

To
BACK UP
PG1791


ORN
BRN
RED
ORN
PNK
PG152
1
3
5
7
PG151
1
3
5
6
D155
C158
RED
F151
F152
C159
C171
D153
C157
C172
C152
C151
D151
C153
C167
C166
D152
C164
D157
C162
D158
C154
R151
C165
C163
C156
C155
C169
C168
PNK
593540
1S-39V-0
CN152

RECTIFIER P.C.B


PG1795
R1781
C1784
PG1792
C1791
BAC
R1776
ZD1791
R1775
C1792
PG1791
R1774
PG1794
D1796
R1787
Q1795
C1797
D1798
C1794
R1778
R1770
R1777
Q1791
C1798
R1773
R1789
ZD1795
R1772
D1796
TP1792
BATTERY
R1797
C1787
C1793
ZD1794
C1789
TP1791
MH437F94V-0
C1770
R1783
R1792
C1790
593541
R1782
Q1796
Q1792
R1791
C1785
R1784
D1791
C1786
R1780
Q1793
D1787
R1785
D1792
ZD1792
D1793
R1795
C1799
Q1797
TP1794
PG1793
ZD1797
R1786
R1793
RC1795
D1795
Q1798
R1788
R1798
C1795
C1796
TP1793
D1789
D1794
R1796
R1790
ZD1796
R1799
R1794

BACK UP P.C.B.

※ VOLTAGES ARE MESURED IN PLAY MODE, AND
VOLTAGES IN ( ) ARE MESURED IN RECORED MODE.

PG1791

1	AC3V
2	AC3V
3	−25A
4	40V
5	18V
6	GND
7	CLOCK

To RECTIFIER
PG152

PG1792

1	40V
2	10V
3	GND

To
CHANNEL PRESET
PG702

PG1793

1	BACK UP
2	———
3	GND

To
BACK UP BATTERY

PG1794

1	−25V
2	AC3V
3	AC3V

To
TIMER
PG104

PG1795

1	GND
2	POWER FAIL
3	CLOCK
4	10V
5	BACK UP

To
TIMER
PG105

Q1791

B	0.1 (0.1)
C	10.0 (10.0)
E	0 (0)

Q1792

B	0.6 (0.6)
C	0.4 (0.4)
E	0 (0)

Q1793

B	——
C	——
E	0.6 (0.6)

Q1795

B	10.4 (10.4)
C	17.4 (17.4)
E	9.8 (9.8)

Q1797

B	2.3 (2.3)
C	1.9 (1.9)
E	2.5 (2.5)

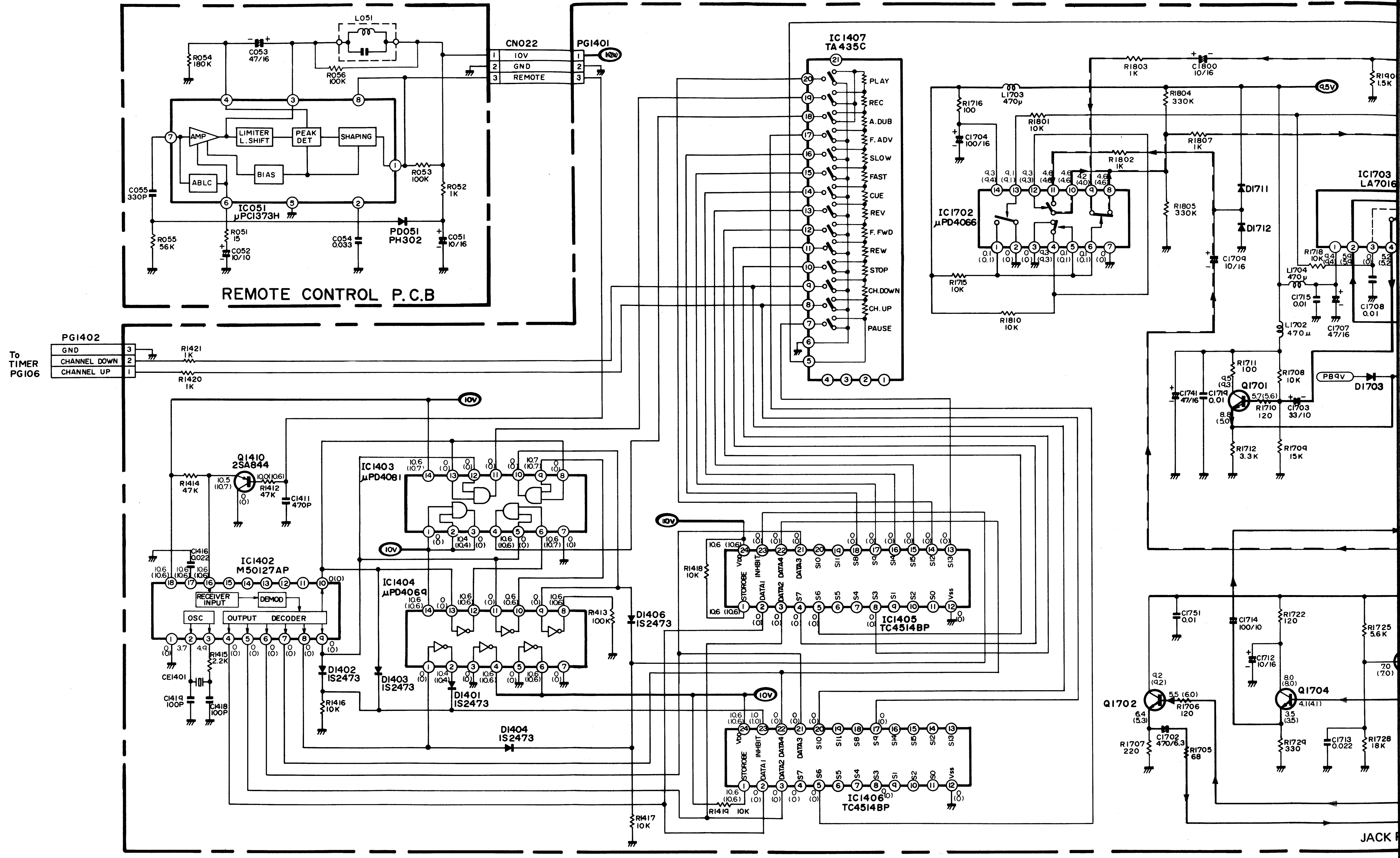
Q1798

B	0.6 (0.6)
C	0.3 (0.3)
E	0 (0)

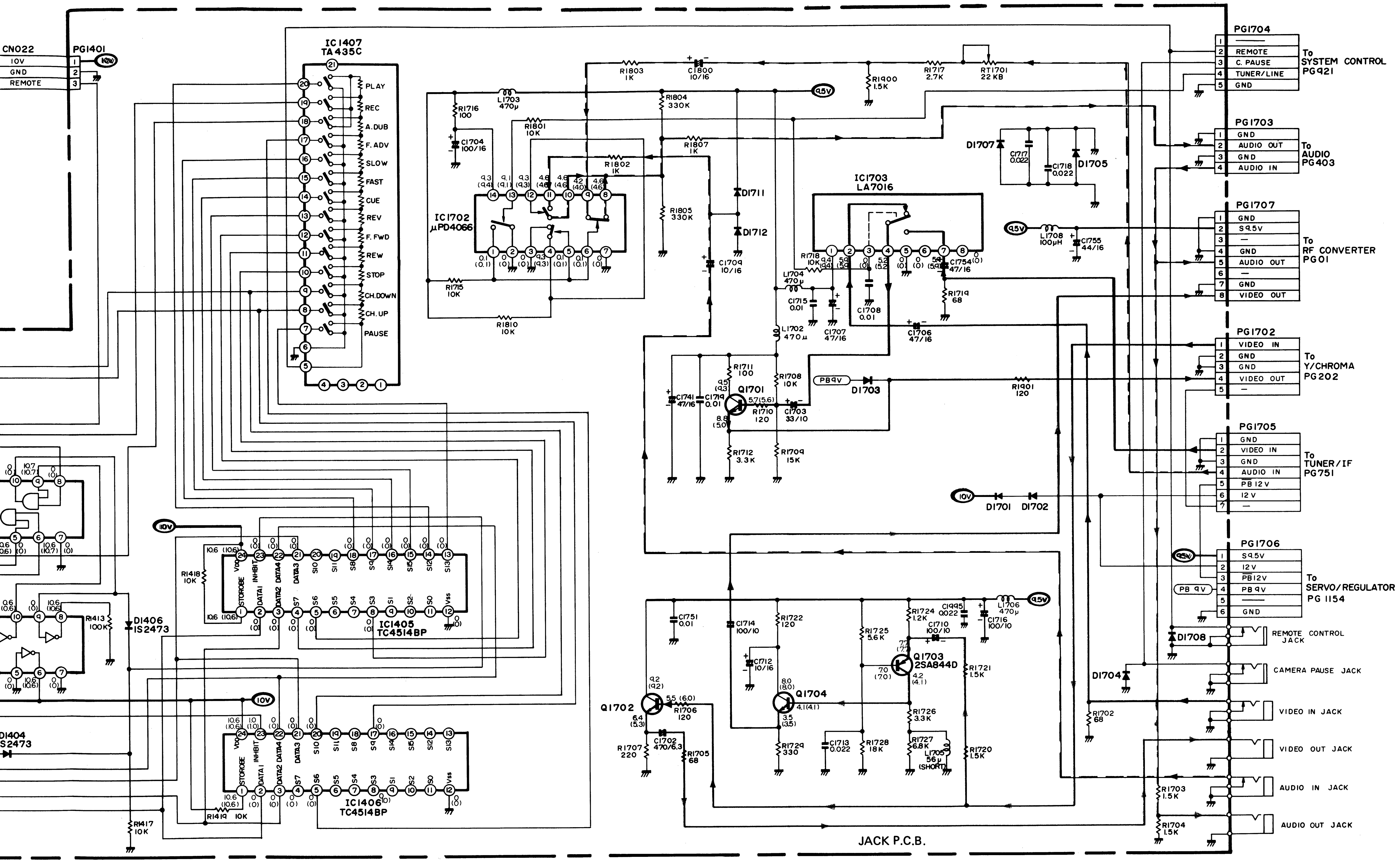
Q1796

B	10.7 (10.7)
C	17.8 (17.8)
E	10.1 (10.1)

JACK/REMOTE CONTROL [For UK model]


REMOTE CONTROL P.C.B
L051
C053 47/16
R054 180K
R056 100K
CN022
PG1401
10V
GND
REMOTE
AMP
LIMITER L.SHIFT
PEAK DET
SHAPING
BIAS
ABLC
IC051 μPC1373H
C055 330P
R055 56K
R051 15
C052 10/10
C054 0.033
PD051 PH302
R053 100K
R052 1K
C051 10/16
To TIMER PG106
PG1402
GND
CHANNEL DOWN
CHANNEL UP
R1421 1K
R1420 1K
IC1407 TA435C
PLAY
REC
A.DUB
F.ADV
SLOW
FAST
CUE
REV
F.FWD
REW
STOP
CH.DOWN
CH.UP
PAUSE
Q1410 2SA844
R1414 47K
R1412 47K
C1411 470P
IC1403 μPD4081
IC1404 μPD4069
IC1402 M50127AP
RECEIVER INPUT
DEMOD
OSC
OUTPUT DECODER
C1416 0.022
CE1401
C1419 100P
C1418 100P
R1415 2.2K
D1402 1S2473
D1403 1S2473
D1401 1S2473
D1404 1S2473
D1406 1S2473
R1416 10K
R1413 100K
R1417 10K
R1418 10K
R1419 10K
IC1405 TC4514BP
IC1406 TC4514BP
VDD
INHBIT
DATA4
DATA3
STOROBE
DATA1
DATA2
S10 S11 S8 S9 S14 S15 S12 S13
S7 S6 S5 S4 S3 S1 S2 S0 Vss
IC1702 μPD4066
R1716 100
L1703 470μ
C1704 100/16
R1801 10K
R1802 1K
R1803 1K
C1800 10/16
R1804 330K
R1805 330K
R1807 1K
R1190 1.5K
9.5V
D1711
D1712
C1709 10/16
R1715 10K
R1810 10K
IC1703 LA7016
R1718 10K
L1704 470μ
C1715 0.01
C1708 0.01
C1707 47/16
L1702 470μ
R1711 100
R1708 10K
PB9V
D1703
Q1701
C1741 47/16
C1719 0.01
R1710 120
C1703 33/10
R1712 3.3K
R1709 15K
C1751 0.01
C1714 100/10
C1712 10/16
R1722 120
R1725 5.6K
Q1702
Q1704
R1706 120
R1707 220
C1702 470/6.3
R1705 68
R1729 330
C1713 0.022
R1728 18K
JACK

REC VIDEO SIGNA
REC AUDIO SIGNA
PB VIDEO SIGNA
PB AUDIO SIGNA


CN022
10V
GND
REMOTE
PG1401
IC1407
TA435C
PLAY
REC
A.DUB
F.ADV
SLOW
FAST
CUE
REV
F.FWD
REW
STOP
CH.DOWN
CH.UP
PAUSE
IC1702
μPD4066
R1716 100
L1703 470μ
C1704 100/16
R1801 10K
R1802 1K
R1803 1K
C1800 10/16
R1804 330K
R1805 330K
R1807 1K
R1715 10K
R1810 10K
D1711
D1712
C1709 10/16
R1900 1.5K
R1717 2.7K
RT1701 22 KB
IC1703
LA7016
R1718 10K
L1704 470μ
C1715 0.01
C1707 47/16
C1708 0.01
C1706 47/16
C1754 47/16
R1719 68
L1702 470μ
D1707
C1717 0.022
C1718 0.022
D1705
L1708 100μH
C1755 44/16
R1711 100
Q1701
R1710 120
R1708 10K
C1703 33/10
C1741 47/16
C1719 0.01
R1712 3.3K
R1709 15K
PB9V
D1703
R1901 120
D1701
D1702
PG1704
REMOTE
C. PAUSE
TUNER/LINE
GND
To SYSTEM CONTROL PG921
PG1703
GND
AUDIO OUT
GND
AUDIO IN
To AUDIO PG403
PG1707
GND
S9.5V
—
GND
AUDIO OUT
—
GND
VIDEO OUT
To RF CONVERTER PG01
PG1702
VIDEO IN
GND
GND
VIDEO OUT
—
To Y/CHROMA PG202
PG1705
GND
VIDEO IN
GND
AUDIO IN
PB 12V
12V
—
To TUNER/IF PG751
PG1706
S9.5V
12V
PB12V
PB9V
GND
To SERVO/REGULATOR PG 1154
D1708
REMOTE CONTROL JACK
CAMERA PAUSE JACK
VIDEO IN JACK
VIDEO OUT JACK
AUDIO IN JACK
AUDIO OUT JACK
D1704
R1702 68
R1703 1.5K
R1704 1.5K
C1751 0.01
C1714 100/10
C1712 10/16
R1722 120
Q1704
R1729 330
C1713 0.022
R1725 5.6K
R1728 18K
R1724 1.2K
C1995 0.022
C1710 100/10
Q1703
2SA844D
R1721 1.5K
R1726 3.3K
R1727 6.8K
L1705 56μ (SHORT)
R1720 1.5K
L1706 470μ
C1716 100/10
Q1702
R1706 120
R1707 220
C1702 470/6.3
R1705 68
JACK P.C.B.
IC1405
TC4514BP
IC1406
TC4514BP
VDD
INHIBIT
DATA4
DATA3
STOROBE
DATA1
DATA2
Vss
R1418 10K
R1413 100K
D1406
IS2473
D1404
IS2473
R1419 10K
R1417 10K
10V
9.5V

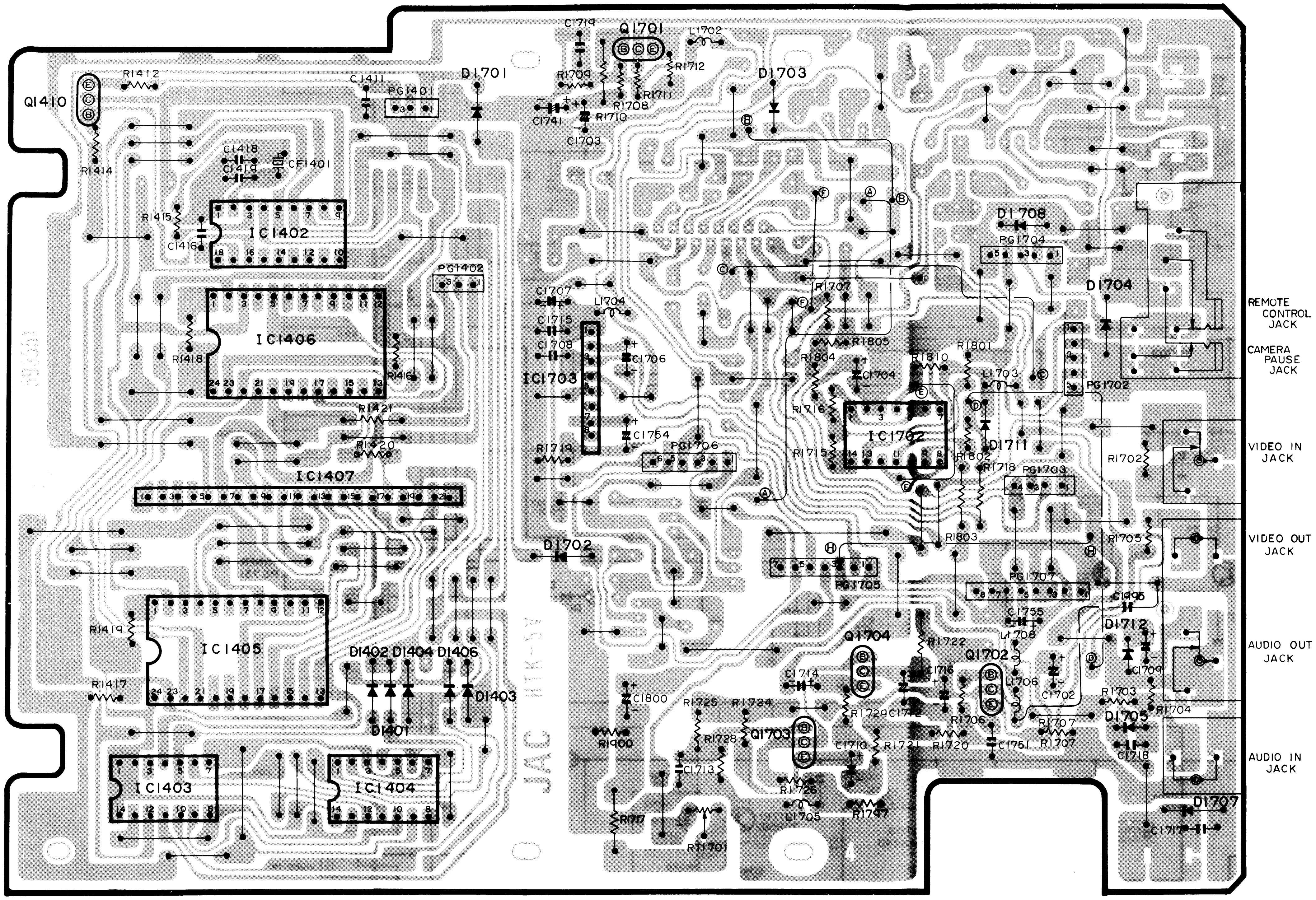
——— REC VIDEO SIGNAL

— — — REC AUDIO SIGNAL

········· PB VIDEO SIGNAL

– – – – PB AUDIO SIGNAL

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND VOLTAGES IN( ) ARE MEASURED IN RECORED MODE.


Q1410
R1412
R1414
R1415
C1416
C1418
C1419
CF1401
C1411
PG1401
IC1402
PG1402
IC1406
R1418
R1416
R1421
R1420
IC1407
R1419
IC1405
R1417
D1402
D1404
D1406
D1403
D1401
IC1403
IC1404
C1719
Q1701
L1702
R1712
R1709
R1708
R1711
R1710
C1741
C1703
D1701
D1703
C1707
C1715
C1708
L1704
C1706
IC1703
C1754
R1719
PG1706
D1702
R1707
R1805
R1804
C1704
R1716
R1715
R1810
R1801
L1703
IC1702
D1711
R1802
R1718
PG1703
R1803
D1708
PG1704
D1704
PG1702
R1702
R1705
PG1705
PG1707
C1995
C1755
L1708
D1712
C1709
Q1704
R1722
Q1702
C1716
C1714
L1706
C1702
C1800
R1725
R1724
R1729
C1712
R1706
R1703
R1704
D1705
R1900
R1728
Q1703
C1710
R1721
R1720
C1751
R1707
C1718
C1713
R1726
L1705
R1747
R1717
RT1701
D1707
C1717
REMOTE CONTROL JACK
CAMERA PAUSE JACK
VIDEO IN JACK
VIDEO OUT JACK
AUDIO OUT JACK
AUDIO IN JACK

JACK P.C.B.

※ VOLTAGE ARE MEASURED IN PLAY MODE, AND
VOLTAGE IN ( ) ARE MEASURED IN RECORED MODE.

PG1401

1	10 V
2	GND
3	REMOTE

To REMOTE CONTROL CN022

PG 1402

1	CHANNEL UP
2	CHANNEL DOWN
3	GND

To TIMER PG 106

PG 1702

1	VIDEO IN
2	GND
3	GND
4	VIDEO OUT
5	—

To Y/CHROMA PG 202

PG 1703

1	GND
2	AUDIO OUT
3	GND
4	AUDIO IN

To AUDIO PG 403

PG 1704

1	—
2	REMOTE
3	C. PAUSE
4	TUNER / LINE
5	GND

To SYSTEM CONTROL PG921

PG 1705

1	GND
2	VIDEO IN
3	GND
4	AUDIO IN
5	$\overline{\text{PB 12V}}$
6	12 V
7	—

To TUNER/IF PG 751

PG 1706

1	S 9.5V
2	12 V
3	$\overline{\text{PB 12V}}$
4	PB 9V
5	—
6	GND

To SERVO/REGULATOR PG 1154

PG 1707

1	GND
2	S 9.5V
3	—
4	GND
5	AUDIO OUT
4	—
5	GND
6	VIDEO OUT

To RF CONVERTOR PG 01

IC1406

1	2	3	4	5	6	7
10.6 (10.6)	0 (0)	0 (0)	0 (0)	0 (0)	—	—
24	23	22	21	20	19	18
10.6 (10.6)	1.0 (1.0)	0 (0)	0 (0)	0 (0)	—	—

IC1405

1	2	3	4	5	6	7
10.6 (10.6)	0 (0)	0 (0)	0 (0)	0 (0)	—	—
24	23	22	21	20	19	18
10.6 (10.6)	0 (0)	0 (0)	0 (0)	—	—	0 (0

IC1402

1	2	3	4	5	6	7
0 (0)	3.7 (3.9)	4.9 (4.9)	0 (0)	0 (0)	0 (0)	0 (0)
18	17	16	15	14	13	12
10.6 (10.6)	10.6 (10.6)	10.6 (10.6)	—	—	—	—

IC1702

1	2	3	4	5	6	7
0.1 (0.1)	0 (0)	0 (0)	9.3 (9.3)	0.1 (0.1)	0.1 (0.1)	0 (0)
14	13	12	11	10	9	8
9.3 (9.4)	9.1 (9.1)	9.3 (9.3)	4.6 (4.6)	4.6 (4.6)	4.2 (4.0)	4.6 (4.6

IC1403

1	2	3	4	5	6	7
10.7 (10.6)	10.7 (10.6)	10.7 (10.6)	0 (0)	0 (0)	10.7 (10.6)	0 (0
14	13	12	11	10	9	8
10.7 (10.6)	0 (0)	0 (0)	0 (0)	0 (0)	10.7 (10.6)	0 (0

IC1404

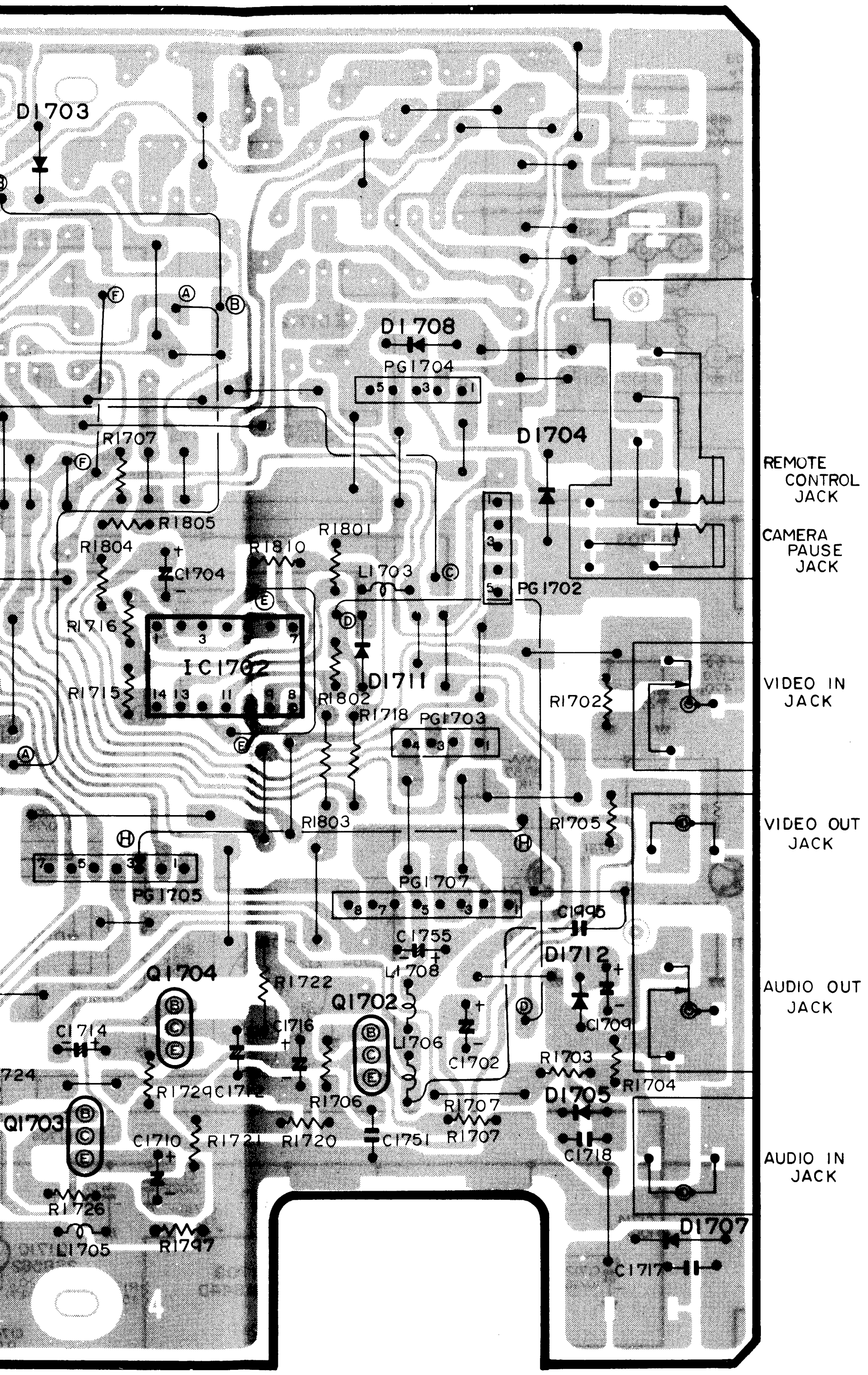
1	2	3	4	5	6	7
0 (0)	10.4 (10.4)	0 (0)	10.6 (10.6)	0 (0)	10.6 (10.6)	0 (0
14	13	12	11	10	9	8
10.6 (10.6)	0 (0)	10.6 (10.6)	0 (0)	10.6 (10.6)	0 (0)	10.6 (10.6

Q1703

B	7.0 (7.0)
C	4.2 (4.1)
E	7.7 (7.7)

Q1704

B	4.1 (4.1)
C	8.0 (8.0)
E	3.5 (3.5)


D1703
D1708
PG1704
D1704
R1707
R1805
R1804
R1810
R1801
L1703
IC1702
R1716
R1715
R1802
D1711
R1718
PG1703
R1702
PG1702
R1803
R1705
PG1705
PG1707
C1995
C1755
L1708
D1712
Q1704
R1722
Q1702
C1714
C1716
L1706
C1702
R1703
R1704
R1729
R1706
D1705
Q1703
C1710
R1721
R1720
C1751
R1707
C1718
R1726
L1705
R1747
D1707
C1717
REMOTE CONTROL JACK
CAMERA PAUSE JACK
VIDEO IN JACK
VIDEO OUT JACK
AUDIO OUT JACK
AUDIO IN JACK

JACK P.C.B.

AY MODE, AND
IN RECORED MODE.

PG1401

1	10V
2	GND
3	REMOTE

To REMOTE CONTROL CN022

PG 1402

1	CHANNEL UP
2	CHANNEL DOWN
3	GND

To TIMER PG 106

PG 1702

1	VIDEO IN
2	GND
3	GND
4	VIDEO OUT
5	—

To Y/CHROMA PG 202

PG 1703

1	GND
2	AUDIO OUT
3	GND
4	AUDIO IN

To AUDIO PG 403

PG 1704

1	—
2	REMOTE
3	C. PAUSE
4	TUNER / LINE
5	GND

To SYSTEM CONTROL PG921

PG 1705

1	GND
2	VIDEO IN
3	GND
4	AUDIO IN
5	$\overline{\text{PB 12V}}$
6	12 V
7	—

To TUNER/IF PG 751

PG 1706

1	S 9.5V
2	12 V
3	$\overline{\text{PB 12V}}$
4	PB 9V
5	—
6	GND

To SERVO/REGULATOR PG 1154

PG 1707

1	GND
2	S 9.5V
3	—
4	GND
5	AUDIO OUT
4	—
5	GND
6	VIDEO OUT

To RF CONVERTOR PG01

IC1406

1	2	3	4	5	6	7	8	9	10	11	12
10.6 (10.6)	0 (0)	0 (0)	0 (0)	0 (0)	—	—	0 (0)	—	—	—	0 (0)
24	23	22	21	20	19	18	17	16	15	14	13
10.6 (10.6)	1.0 (1.0)	0 (0)	0 (0)	0 (0)	—	—	0 (0)	—	—	—	—

IC1405

1	2	3	4	5	6	7	8	9	10	11	12
10.6 (10.6)	0 (0)	0 (0)	0 (0)	0 (0)	—	—	0 (0)	—	—	—	0 (0)
24	23	22	21	20	19	18	17	16	15	14	13
10.6 (10.6)	0 (0)	0 (0)	0 (0)	—	—	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

IC1402

1	2	3	4	5	6	7	8	9
0 (0)	3.7 (3.9)	4.9 (4.9)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
18	17	16	15	14	13	12	11	10
10.6 (10.6)	10.6 (10.6)	10.6 (10.6)	—	—	—	—	—	0 (0)

IC1702

1	2	3	4	5	6	7
0.1 (0.1)	0 (0)	0 (0)	9.3 (9.3)	0.1 (0.1)	0.1 (0.1)	0 (0)
14	13	12	11	10	9	8
9.3 (9.4)	9.1 (9.1)	9.3 (9.3)	4.6 (4.6)	4.6 (4.6)	4.2 (4.0)	4.6 (4.6)

IC1703

1	9.4 (9.4)
2	5.9 (5.9)
3	0 (0)
4	5.2 (5.2)
5	0 (0)
6	0 (0)
7	5.9 (5.9)
8	0 (0)

IC1403

1	2	3	4	5	6	7
10.7 (10.6)	10.7 (10.6)	10.7 (10.6)	0 (0)	0 (0)	10.7 (10.6)	0 (0)
14	13	12	11	10	9	8
10.7 (10.6)	0 (0)	0 (0)	0 (0)	0 (0)	10.7 (10.6)	0 (0)

IC1404

1	2	3	4	5	6	7
0 (0)	10.4 (10.4)	0 (0)	10.6 (10.6)	0 (0)	10.6 (10.6)	0 (0)
14	13	12	11	10	9	8
10.6 (10.6)	0 (0)	10.6 (10.6)	0 (0)	10.6 (10.6)	0 (0)	10.6 (10.6)

Q1410

B	10.0 (10.6)
C	0 (0)
E	10.5 (10.7)

Q1701

B	5.7 (5.6)
C	9.5 (9.3)
E	8.8 (5.0)

Q1702

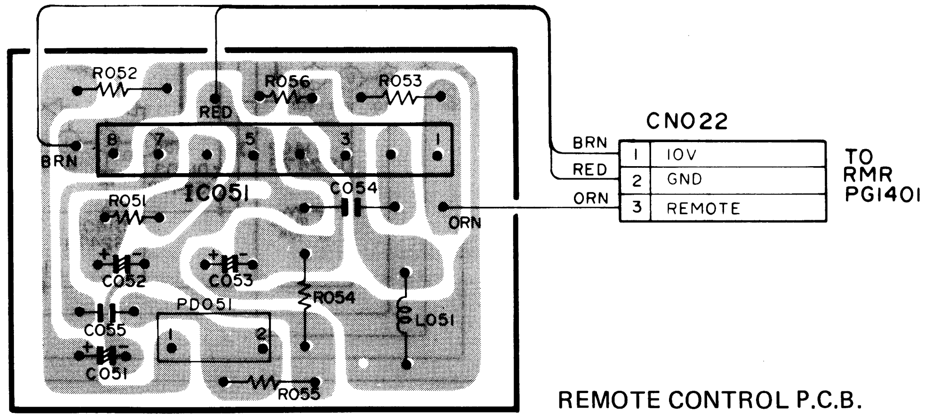
B	5.5 (6.0)
C	9.2 (9.2)
E	6.4 (5.3)

Q1703

B	7.0 (7.0)
C	4.2 (4.1)
E	7.7 (7.7)

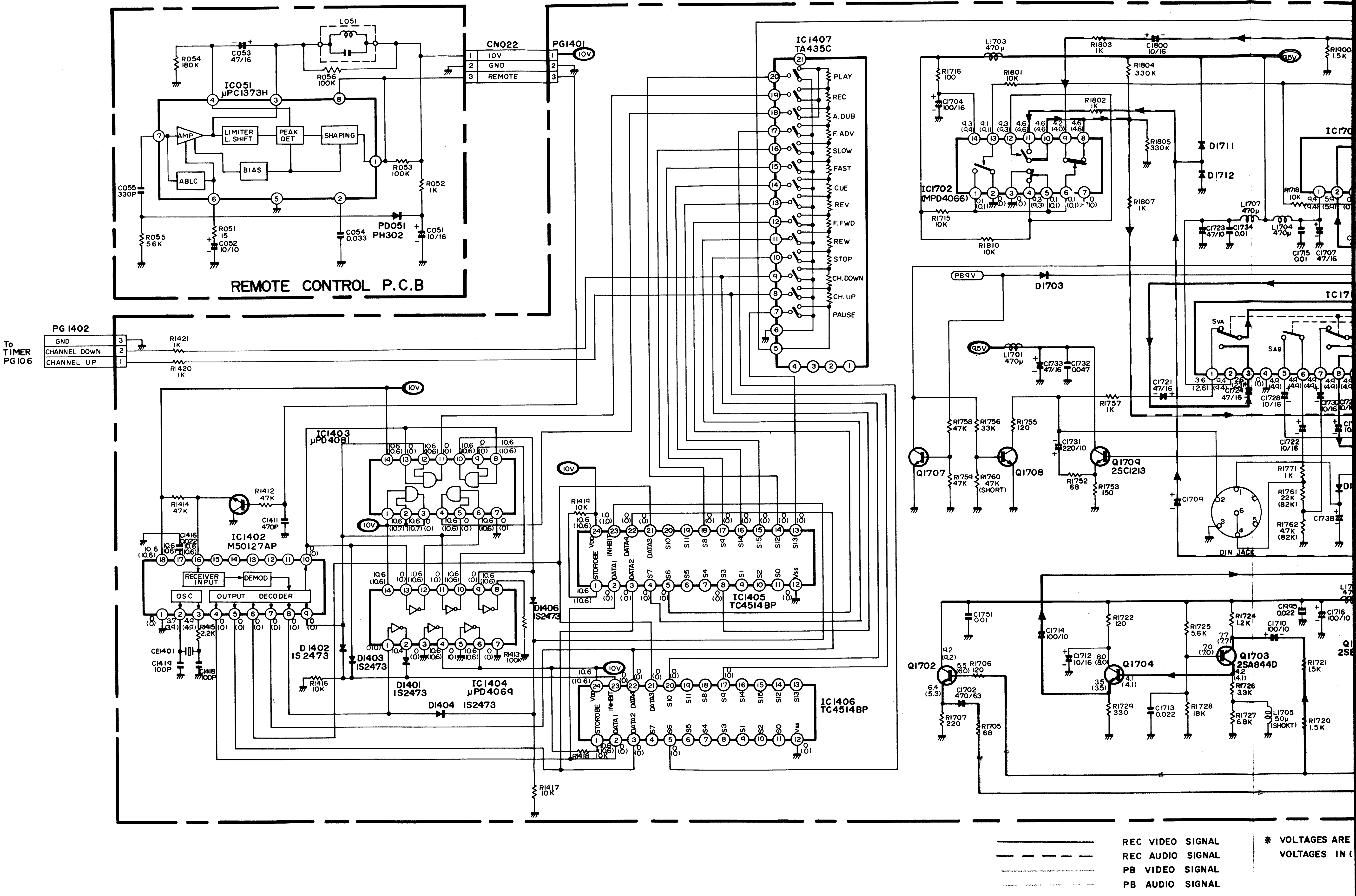
Q1704

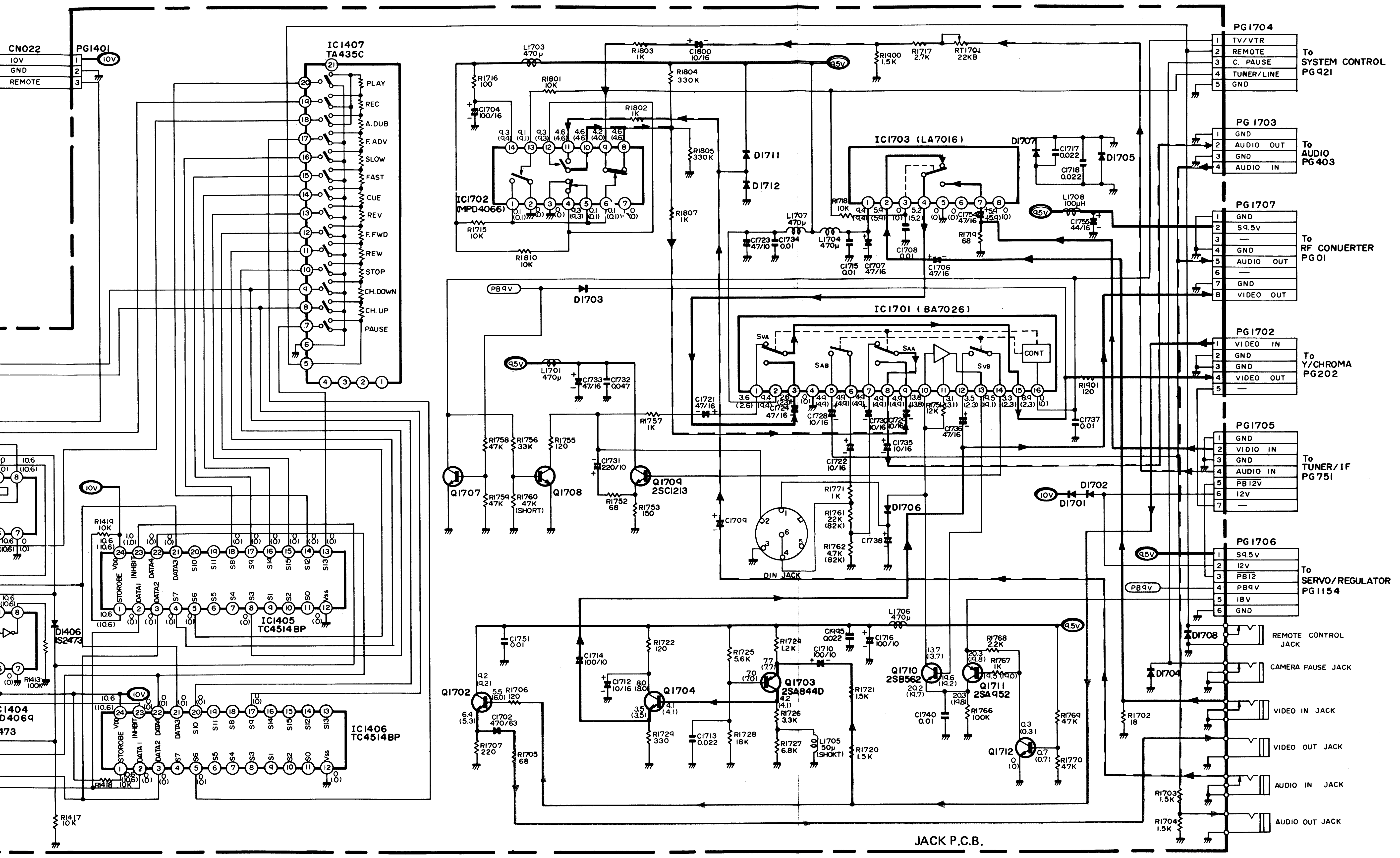
B	4.1 (4.1)
C	8.0 (8.0)
E	3.5 (3.5)


R052
R056
R053
RED
BRN
IC051
R051
C054
ORN
C052
C053
PD051
R054
L051
C055
C051
R055
BRN
RED
ORN
CN022
1 10V
2 GND
3 REMOTE
TO RMR PG1401

REMOTE CONTROL P.C.B.

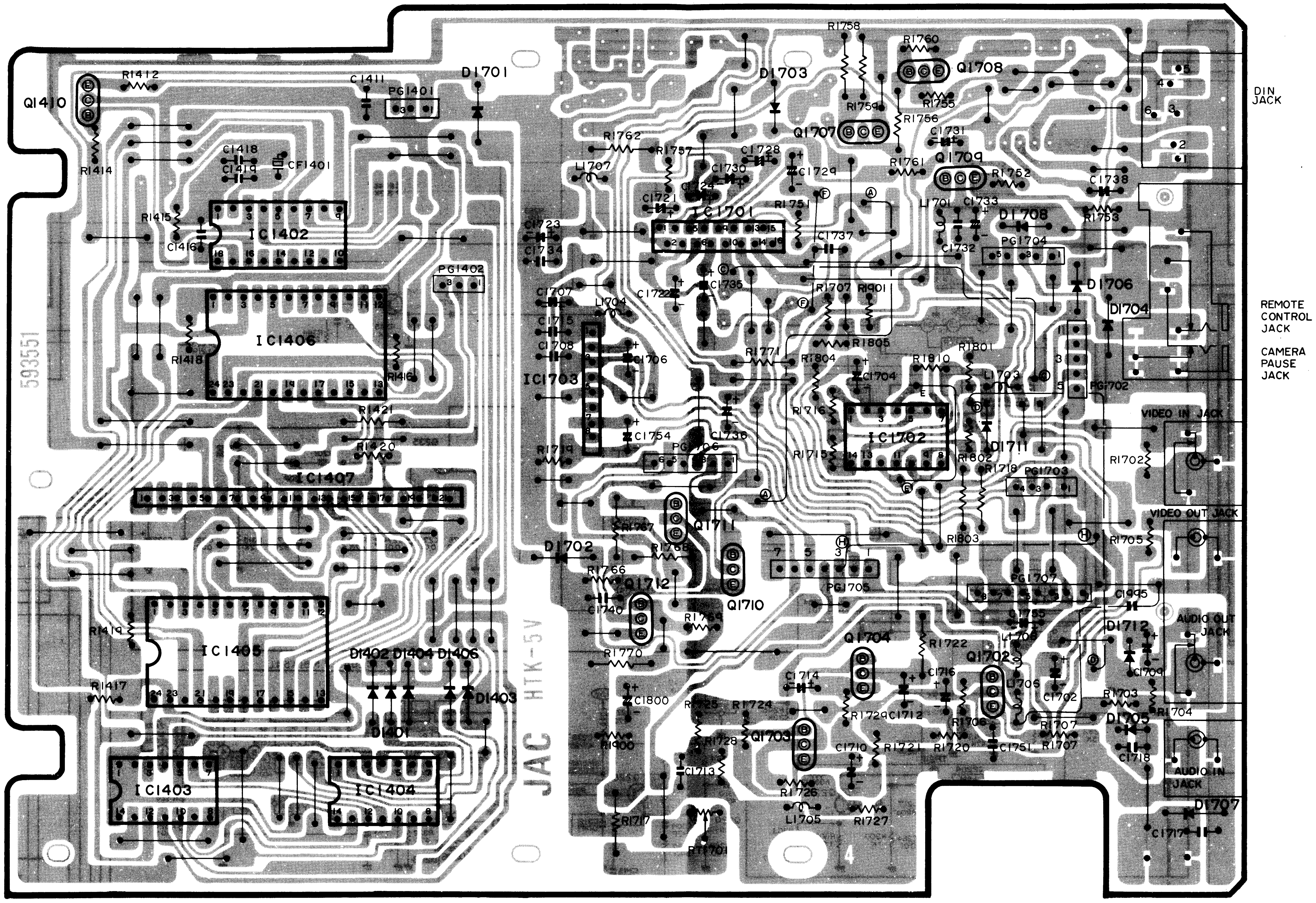
JACK/REMOTE CONTROL [Except for UK model]


REMOTE CONTROL P.C.B
IC051 μPC1373H
AMP
LIMITER L. SHIFT
PEAK DET
SHAPING
BIAS
ABLC
L051
R054 180K
C053 47/16
R056 100K
R053 100K
R052 1K
C055 330P
R055 56K
R051 15
C052 10/10
C054 0.033
PD051 PH302
C051 10/16
CN022
1 10V
2 GND
3 REMOTE
PG1401
10V
PG 1402
To TIMER PG106
GND
CHANNEL DOWN
CHANNEL UP
R1421 1K
R1420 1K
IC1407 TA435C
PLAY
REC
A.DUB
F.ADV
SLOW
FAST
CUE
REV
F.FWD
REW
STOP
CH.DOWN
CH.UP
PAUSE
IC1403 μPD4081
IC1404 μPD4069
IC1402 M50127AP
RECEIVER INPUT
DEMOD
OSC
OUTPUT DECODER
R1412 47K
R1414 47K
C1411 470P
C1416 0.022
CE1401
C1419 100P
C1418 100P
R1415 2.2K
D1402 1S2473
D1403 1S2473
D1401 1S2473
D1404 1S2473
D1406 1S2473
R1416 10K
R1413 100K
R1417 10K
R1418 10K
R1419 10K
IC1405 TC4514BP
IC1406 TC4514BP
STOROBE
INHBT
DATA1
DATA2
DATA3
DATA4
VDD
Vss
IC1702 (MPD4066)
L1703 470μ
R1716 100
C1704 100/16
R1801 10K
R1802 1K
R1803 1K
C1800 10/16
R1804 330K
R1805 330K
R1807 1K
R1900 1.5K
15V
D1711
D1712
R1715 10K
R1810 10K
R1718 10K
L1707 470μ
C1723 47/10
C1734 0.01
L1704 470μ
C1715 0.01
C1707 47/16
PB9V
D1703
15V
L1701 470μ
C1733 47/16
C1732 0.047
R1757 1K
R1758 47K
R1756 33K
R1755 120
R1759 47K
R1760 47K (SHORT)
C1731 220/10
R1752 68
R1753 150
Q1707
Q1708
Q1709 2SC1213
C1721 47/16
C1724 47/16
C1728 10/16
C1730 10/16
C1722 10/16
C1709
R1771 1K
R1761 22K (82K)
R1762 4.7K (82K)
C1738
DIN JACK
SVA
SAB
C1751 0.01
C1714 100/10
C1712 10/16
R1722 120
R1725 5.6K
R1724 1.2K
C1995 0.022
C1710 100/10
C1716 100/10
Q1702
Q1704
Q1703 2SA844D
R1706 120
C1702 470/63
R1707 220
R1705 68
R1729 330
C1713 0.022
R1728 18K
R1726 3.3K
R1727 6.8K
L1705 50μ (SHORT)
R1721 1.5K
R1720 1.5K
REC VIDEO SIGNAL
REC AUDIO SIGNAL
PB VIDEO SIGNAL
PB AUDIO SIGNAL
※ VOLTAGES ARE
VOLTAGES IN (


CN022
10V
GND
REMOTE
PG1401
10V
IC1407
TA435C
PLAY
REC
A.DUB
F.ADV
SLOW
FAST
CUE
REV
F.FWD
REW
STOP
CH.DOWN
CH.UP
PAUSE
IC1405
TC4514BP
STOROBE
DATA1
DATA2
DATA3
DATA4
INHBIT
VDD
VSS
R1419 10K
D1406 1S2473
R1413 100K
IC1404
D4069
R1418 10K
R1417 10K
IC1406
TC4514BP
IC1702 (MPD4066)
R1716 100
C1704 100/16
L1703 470μ
R1801 10K
R1802 1K
R1803 1K
C1800 10/16
R1804 330K
R1805 330K
R1807 1K
R1715 10K
R1810 10K
D1711
D1712
R1900 1.5K
R1717 2.7K
RT1701 22KB
9.5V
IC1703 (LA7016)
D1707
C1717 0.022
C1718 0.022
D1705
R1718 10K
L1707 470μ
C1723 47/10
C1734 0.01
L1704 470μ
C1715 0.01
C1707 47/16
C1708 0.01
C1706 47/16
C1754 47/16
R1719 68
L1708 100μH
C1755 44/16
PB9V
D1703
IC1701 (BA7026)
SVA
SAB
SAA
SVB
CONT
R1901 120
C1737 0.01
C1721 47/16
C1724 47/16
C1728 10/16
C1730 10/16
C1720 10/16
C1735 10/16
C1722 10/16
R1751 12K
C1736 47/16
L1701 470μ
C1733 47/16
C1732 0.047
R1757 1K
R1758 47K
R1756 33K
R1755 120
C1731 220/10
Q1707
Q1708
Q1709 2SC1213
R1759 47K
R1760 47K (SHORT)
R1752 68
R1753 150
C1709
R1771 1K
R1761 22K (82K)
R1762 4.7K (82K)
C1738
D1706
DIN JACK
10V
D1702
D1701
L1706 470μ
C1751 0.01
R1722 120
R1725 5.6K
R1724 1.2K
C1995 0.022
C1716 100/10
C1710 100/10
C1714 100/10
C1712 10/16
Q1702
R1706 120
C1702 470/63
R1707 220
R1705 68
Q1704
R1729 330
C1713 0.022
R1728 18K
Q1703 2SA844D
R1726 3.3K
R1727 6.8K
L1705 50μ (SHOKT)
R1721 1.5K
R1720 1.5K
Q1710 2SB562
C1740 0.01
R1768 2.2K
R1767 1K
Q1711 2SA952
R1766 100K
Q1712
R1769 47K
R1770 47K
R1702 18
R1703 1.5K
R1704 1.5K
D1708
D1704
JACK P.C.B.
PG1704
1 TV/VTR
2 REMOTE
3 C. PAUSE
4 TUNER/LINE
5 GND
To SYSTEM CONTROL PG921
PG 1703
1 GND
2 AUDIO OUT
3 GND
4 AUDIO IN
To AUDIO PG403
PG1707
1 GND
2 S9.5V
3 —
4 GND
5 AUDIO OUT
6 —
7 GND
8 VIDEO OUT
To RF CONUERTER PG01
PG1702
1 VIDEO IN
2 GND
3 GND
4 VIDEO OUT
5 —
To Y/CHROMA PG202
PG1705
1 GND
2 VIDIO IN
3 GND
4 AUDIO IN
5 PB12V
6 12V
7 —
To TUNER/IF PG751
PG1706
1 S9.5V
2 12V
3 PB12
4 PB9V
5 18V
6 GND
To SERVO/REGULATOR PG1154
REMOTE CONTROL JACK
CAMERA PAUSE JACK
VIDEO IN JACK
VIDEO OUT JACK
AUDIO IN JACK
AUDIO OUT JACK

━━━━ REC VIDEO SIGNAL
— — — REC AUDIO SIGNAL
──── PB VIDEO SIGNAL
┈┈┈┈ PB AUDIO SIGNAL

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.


Q1410
R1412
R1414
C1411
PG1401
D1701
C1418
C1419
CF1401
R1415
C1416
IC1402
PG1402
IC1406
R1418
R1416
R1421
R1420
IC1407
IC1405
R1419
R1417
D1402 D1404 D1406
D1403
D1401
IC1403
IC1404
593551
JAC HTK-5V
R1758
R1760
Q1708
D1703
R1759
R1755
R1756
Q1707
R1762
R1757
C1728
L1707
C1730
C1729
C1731
R1761
Q1709
R1752
C1721
C1724
IC1701
R1751
L1701
C1733
D1708
C1738
R1753
C1723
C1734
C1737
C1732
PG1704
C1722
C1736
R1707
R1901
D1706
C1707
L1704
D1704
C1715
C1708
C1706
IC1703
R1771
R1804
R1805
R1810
R1801
C1704
L1703
PG1702
R1716
IC1702
D1711
C1754
C1735
PG1706
R1719
R1715
R1802
R1718
PG1703
R1702
Q1711
R1767
R1768
D1702
R1766
Q1712
Q1710
C1740
R1803
R1705
PG1705
PG1707
C1995
R1770
Q1704
R1722
Q1702
D1712
C1714
C1716
C1705
C1709
C1800
R1725
R1724
R1729
C1712
C1702
R1703
R1704
R1900
R1728
Q1703
C1710
R1721
R1720
C1751
R1707
D1705
C1718
C1713
R1706
R1726
L1705
R1727
R1717
RT1701
D1707
C1717
DIN JACK
REMOTE CONTROL JACK
CAMERA PAUSE JACK
VIDEO IN JACK
VIDEO OUT JACK
AUDIO OUT JACK
AUDIO IN JACK

※ VOLTAGE ARE MEASURED IN PLAY MODE, AND
VOLTAGE IN ( ) ARE MEASURED IN RECORED MODE

JACK P.C.B.

PG1401

1	10V
2	GND
3	REMOTE

To
REMOTE CONTROL
CN002

1	2
10.6 (10.6)	0 (0)
24	23
10.6 (10.6)	1.0 (1.0)

PG1402

1	CHANNEL UP
2	CHANNEL DOWN
3	GND

To
TIMER
PG106

1	2
10.6 (10.6)	0 (0)
24	23
10.6 (10.6)	0 (0)

PG1702

1	VIDEO IN
2	GND
3	GND
4	VIDEO OUT
5	——

To
Y/CHROMA
PG202

1	2
0 (0)	3.7 (3.9)
18	17
10.6 (10.6)	10.6 (10.6)

PG1703

1	GND
2	AUDIO OUT
3	GND
4	AUDIO IN

To
AUDIO
PG403

1	3
3.2 (2.6)	2.6 (2.3)
2	4
9.4 (9.4)	0 (0)

PG1704

1	TV/VTR
2	REMOTE
3	C. PAUSE
4	TUNER/LINE
5	GND

To
SYSTEM CONTROL
PG921

1	2
10.7 (10.6)	10.7 (10.6)
14	13
10.7 (10.6)	0 (0)

PG1705

1	GND
2	VIDEO IN
3	GND
4	AUDIO IN
5	$\overline{\text{PB}}$ 12V
6	12 V
7	——

To
TONER/IF
PG751

1	2
0 (0)	10.4 (10.4)
14	13
10.6 (10.6)	0 (0)

Q1703

B	7.0 (7.0)
C	4.2 (4.1)
E	7.7 (7.7)

PG1706

1	S9.5V
2	12V
3	$\overline{\text{PB}}$ 12V
4	PB 9V
5	18V
6	GND

To
SERVO/REGVLATOR
PG1154

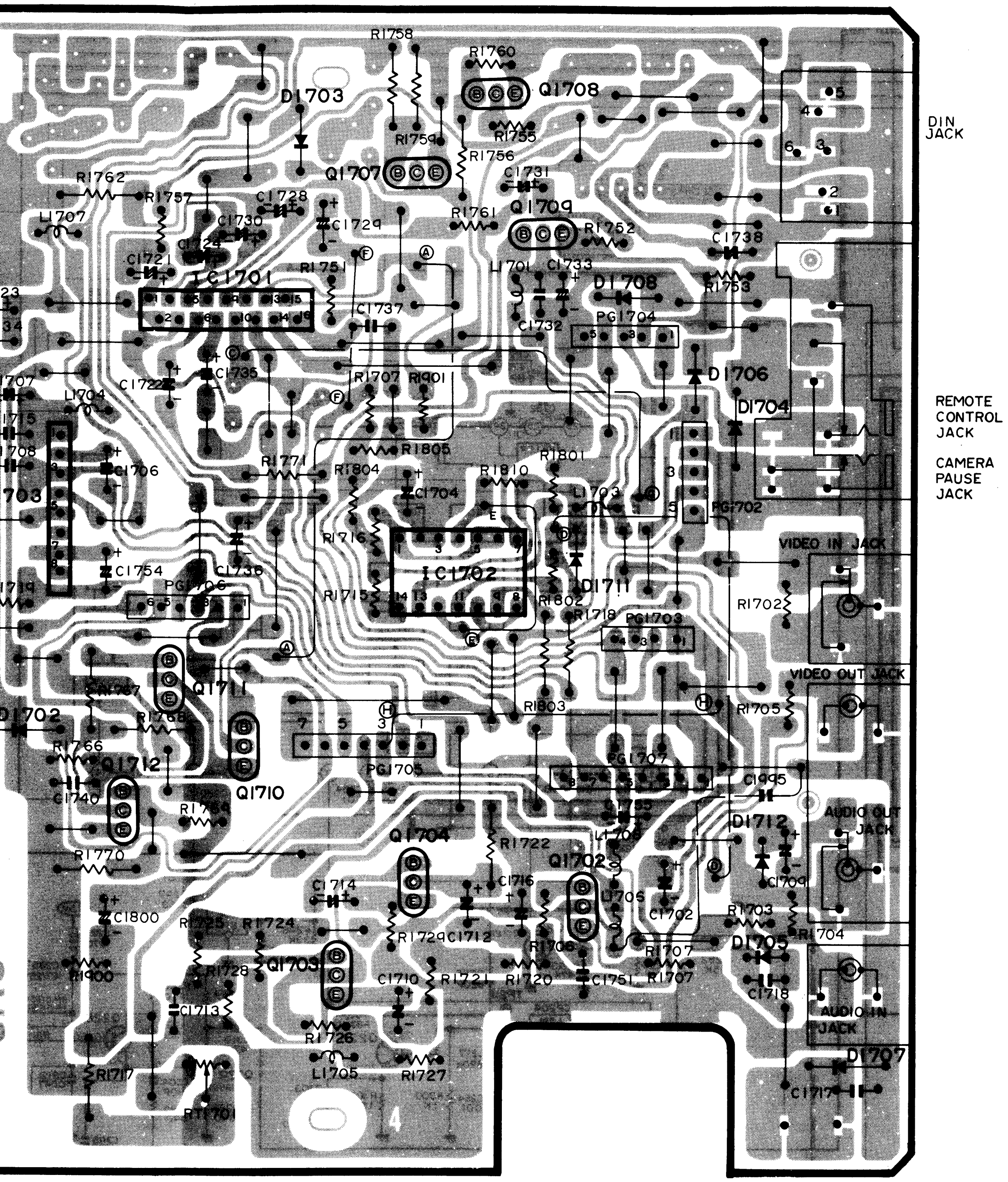
IC1702

1	2	3
0.1 (0.1)	0 (0)	0 (0)
14	13	12
9.3 (9.4)	9.1 (9.1)	9.3 (9.3)

PG1707

1	GND
2	S9.5V
3	——
4	GND
5	AUDIO OUT
6	——
7	GND
8	VIDEO OUT

To
RF CONVERTOR
PG01


DIN JACK
REMOTE CONTROL JACK
CAMERA PAUSE JACK
VIDEO IN JACK
VIDEO OUT JACK
AUDIO OUT JACK
AUDIO IN JACK
R1758
R1760
D1703
Q1708
R1759
R1755
R1756
Q1707
C1731
R1762
R1757
C1728
C1729
R1761
Q1709
R1752
L1707
C1730
C1738
C1721
IC1701
R1751
L1701
C1733
D1708
R1753
C1737
C1732
PG1704
C1722
C1735
R1707
R1901
D1706
D1704
L1704
R1805
C1706
R1771
R1804
R1810
R1801
C1704
L1703
PG1702
C1754
PG1706
C1736
R1716
IC1702
D1711
R1715
R1802
R1718
PG1703
R1702
Q1711
R1737
R1765
D1702
R1766
Q1712
C1740
Q1710
R1764
PG1705
R1803
R1705
PG1707
C1995
R1770
Q1704
R1722
Q1702
D1712
C1714
C1716
C1709
C1800
R1725
R1724
R1729
C1712
C1702
R1703
R1704
D1705
R1728
Q1703
R1706
R1707
C1751
R1720
R1721
C1710
R1900
C1713
C1718
R1726
L1705
R1727
D1707
R1717
R1701
C1717

ARE MEASURED IN PLAY MODE, AND
N ( ) ARE MEASURED IN RECORED MODE

JACK P.C.B.

PG1401

1	10V
2	GND
3	REMOTE

To
REMOTE CONTROL
CN002

PG1402

1	CHANNEL UP
2	CHANNEL DOWN
3	GND

To
TIMER
PG106

PG1702

1	VIDEO IN
2	GND
3	GND
4	VIDEO OUT
5	——

To
Y/CHROMA
PG202

PG1703

1	GND
2	AUDIO OUT
3	GND
4	AUDIO IN

To
AUDIO
PG403

PG1704

1	TV/VTR
2	REMOTE
3	C. PAUSE
4	TUNER/LINE
5	GND

To
SYSTEM CONTROL
PG921

PG1705

1	GND
2	VIDEO IN
3	GND
4	AUDIO IN
5	$\overline{\text{PB 12V}}$
6	12 V
7	——

To
TONER/IF
PG751

PG1706

1	S9.5V
2	12V
3	$\overline{\text{PB 12V}}$
4	PB 9V
5	18V
6	GND

To
SERVO/REGVLATOR
PG1154

PG1707

1	GND
2	S9.5 V
3	——
4	GND
5	AUDIO OUT
6	——
7	GND
8	VIDEO OUT

To
RF CONVERTOR
PG01

IC1406

1	2	3	4	5	6	7	8	9	10	11	12
10.6 (10.6)	0 (0)	0 (0)	0 (0)	0 (0)	—	—	0 (0)	—	—	—	0 (0)
24	23	22	21	20	19	18	17	16	15	14	13
10.6 (10.6)	1.0 (1.0)	0 0	0 (0)	0 (0)	—	—	0 (0)	—	—	—	—

IC1405

1	2	3	4	5	6	7	8	9	10	11	12
10.6 (10.6)	0 (0)	0 (0)	0 (0)	0 (0)	—	—	0 (0)	—	—	—	0 (0)
24	23	22	21	20	19	18	17	16	15	14	13
10.6 (10.6)	0 (0)	0 (0)	0 (0)	—	—	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

IC1402

1	2	3	4	5	6	7	8	9
0 (0)	3.7 (3.9)	4.9 (4.9)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
18	17	16	15	14	13	12	11	10
10.6 (10.6)	10.6 (10.6)	10.6 (10.6)	—	—	—	—	—	0 (0)

IC1701

1	3	5	7	9	11	13	15
3.2 (2.6)	2.6 (2.3)	4.9 (4.9)	4.9 (4.9)	4.9 (4.9)	3.1 (3.1)	19.5 (19.1)	8.9 (2.3)
2	4	6	8	10	12	14	16
9.4 (9.4)	0 (0)	4.9 (4.9)	4.9 (4.9)	13.8 (13.8)	3.5 (2.3)	3.3 (2.3)	0 (0)

IC1703

1	9.4 (9.4)
2	5.9 (5.9)
3	0 (0)
4	5.2 (5.2)
5	0 (0)
6	0 (0)
7	5.9 (5.9)
8	0 (0)

IC1403

1	2	3	4	5	6	7
10.7 (10.6)	10.7 (10.6)	10.7 (10.6)	0 (0)	0 (0)	10.7 (10.6)	0 (0)
14	13	12	11	10	9	8
10.7 (10.6)	0 (0)	0 (0)	0 (0)	0 (0)	10.7 (10.6)	0 (0)

IC1404

1	2	3	4	5	6	7
0 (0)	10.4 (10.4)	10.6 (10.7)	0 (0)	0 (0)	10.6 (10.7)	0 (0)
14	13	12	11	10	9	8
10.6 (10.6)	0 (0)	10.6 (10.6)	0 (0)	10.6 (10.6)	0 (0)	10.6 (10.6)

Q1410

B	10.0 (10.6)
C	0 (0)
E	10.5 (10.7)

Q1701

B	5.7 (5.6)
C	9.5 (9.3)
E	8.8 (5.0)

Q1702

B	5.5 (6.0)
C	9.2 (9.2)
E	6.4 (5.3)

Q1703

B	7.0 (7.0)
C	4.2 (4.1)
E	7.7 (7.7)

Q1704

B	4.1 (4.1)
C	8.0 (8.0)
E	3.5 (3.5)

Q1710

B	19.6 (19.2)
C	13.7 (13.7)
E	20.2 (19.7)

Q1711

B	19.5 (19.0)
C	20.3 (19.8)
E	20.3 (19.8)

Q1712

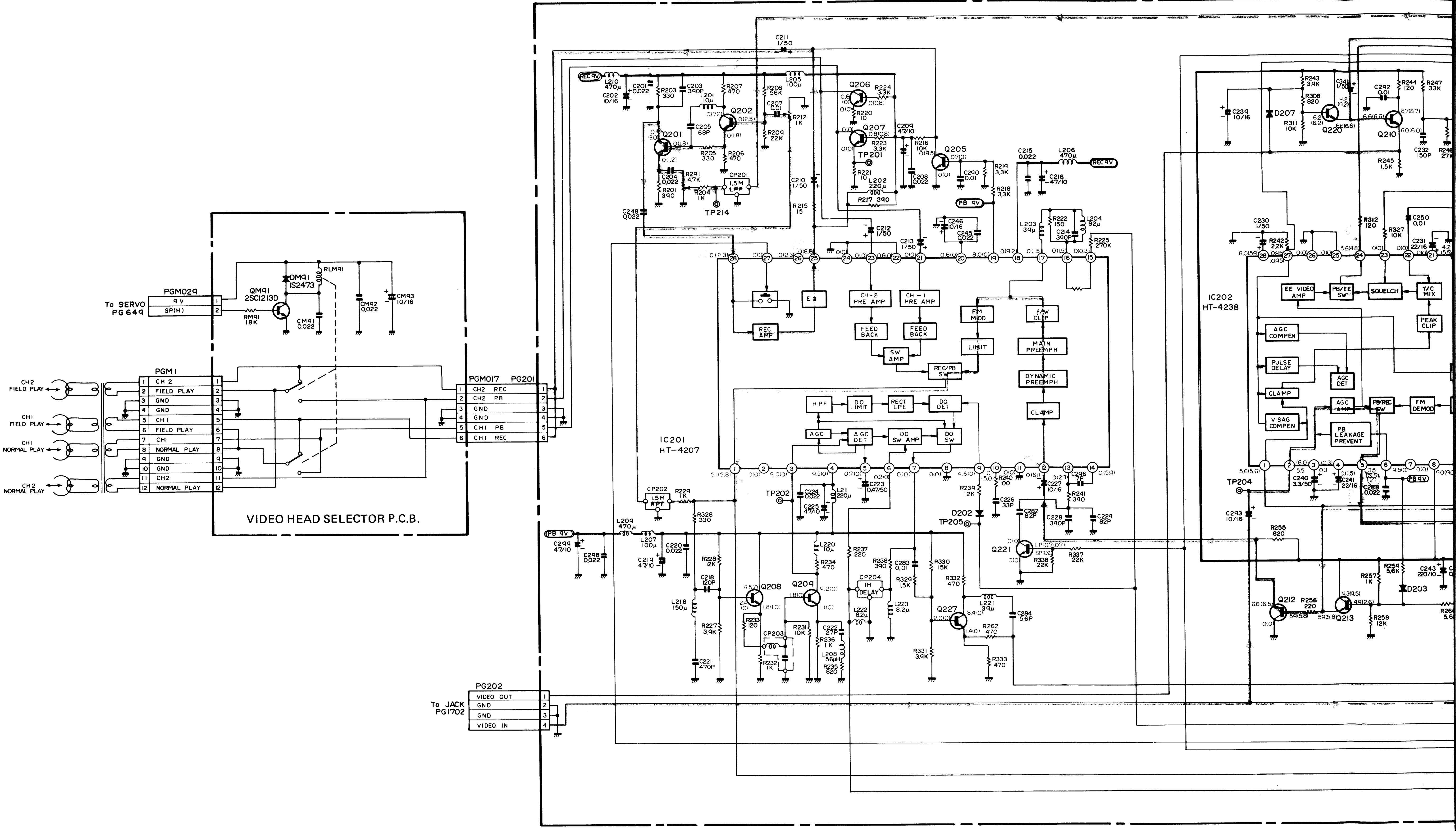
B	0.7 (0.7)
C	0.3 (0.3)
E	0 (0)

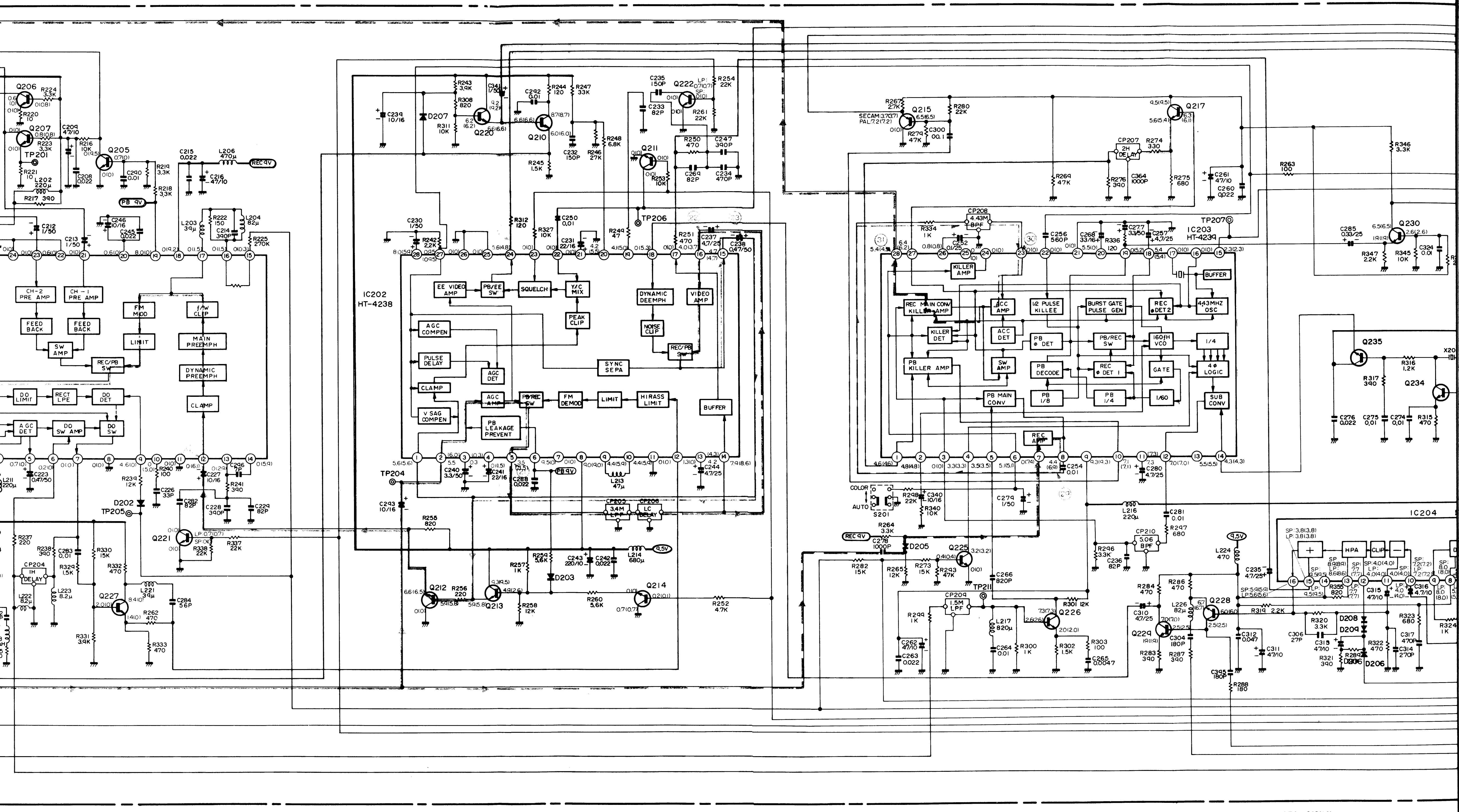
IC1702

1	2	3	4	5	6	7
0.1 (0.1)	0 (0)	0 (0)	9.3 (9.3)	0.1 (0.1)	0.1 (0.1)	0 (0)
14	13	12	11	10	9	8
9.3 (9.4)	9.1 (9.1)	9.3 (9.3)	4.6 (4.6)	4.6 (4.6)	4.2 (4.0)	4.6 (4.6)

MEMO

Y/CHROMA [For UK model]

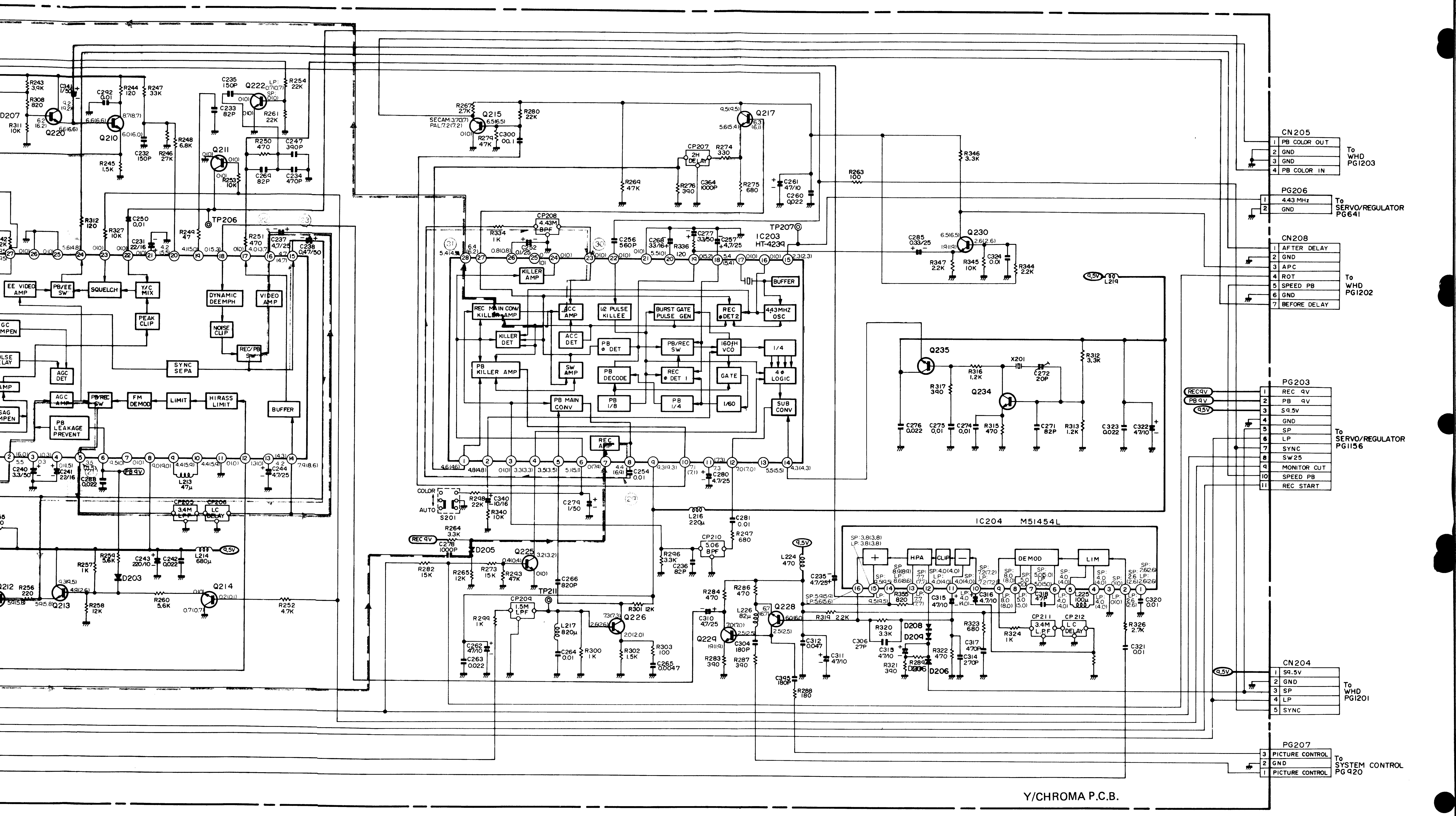

VIDEO HEAD SELECTOR P.C.B.
To SERVO PG649
PGM029
9V
SP(H)
QM91 2SC1213D
DM91 1S2473
RLM91
RM91 18K
CM91 0.022
CM92 0.022
CM93 10/16
PGM1
CH2 FIELD PLAY
CH1 FIELD PLAY
CH1 NORMAL PLAY
CH2 NORMAL PLAY
CH 2
FIELD PLAY
GND
CH1
NORMAL PLAY
PGM017
PG201
CH2 REC
CH2 PB
CH1 PB
CH1 REC
PG202
To JACK PG1702
VIDEO OUT
VIDEO IN
REC 9V
PB 9V
IC201 HT-4207
IC202 HT-4238
REC AMP
EQ
CH-2 PRE AMP
CH-1 PRE AMP
FEED BACK
SW AMP
REC/PB SW
FM MOD
LIMIT
f/W CLIP
MAIN PREEMPH
DYNAMIC PREEMPH
CLAMP
HPF
DO LIMIT
RECT LPF
DO DET
AGC
AGC DET
DO SW AMP
DO SW
EE VIDEO AMP
PB/EE SW
SQUELCH
Y/C MIX
PEAK CLIP
AGC COMPEN
PULSE DELAY
AGC DET
CLAMP
V SAG COMPEN
AGC AMP
PB/REC SW
FM DEMOD
PB LEAKAGE PREVENT
Q201
Q202
Q205
Q206
Q207
Q208
Q209
Q210
Q212
Q213
Q220
Q221
Q227
D202
D203
D207
TP201
TP202
TP204
TP205
TP214
CP201 1.5M LPF
CP202 1.5M HPF
CP203
CP204 1H DELAY
L205 100µ
L206 470µ
L209 470µ
L210 470µ
C211 1/50


IC202
HT-4238
IC203
HT-4239
IC204
EE VIDEO AMP
PB/EE SW
SQUELCH
Y/C MIX
PEAK CLIP
DYNAMIC DEEMPH
VIDEO AMP
NOISE CLIP
REC/PB SW
AGC COMPEN
PULSE DELAY
AGC DET
SYNC SEPA
CLAMP
AGC AMP
PB/REC SW
FM DEMOD
LIMIT
HIPASS LIMIT
BUFFER
V SAG COMPEN
PB LEAKAGE PREVENT
CH-2 PRE AMP
CH-1 PRE AMP
FEED BACK
SW AMP
REC/PB SW
FM MOD
LIMIT
F/W CLIP
MAIN PREEMPH
DYNAMIC PREEMPH
CLAMP
DO LIMIT
RECT LPF
DO DET
AGC DET
DO SW AMP
DO SW
KILLER AMP
ACC AMP
1/2 PULSE KILLEE
BURST GATE PULSE GEN
REC φDET 2
4.43MHZ OSC
REC MAIN CONV KILLER AMP
KILLER DET
ACC DET
PB φ DET
PB/REC SW
160fH VCO
1/4
PB KILLER AMP
SW AMP
PB DECODE
REC φ DET 1
GATE
4φ LOGIC
PB MAIN CONV
PB 1/8
PB 1/4
1/60
SUB CONV
REC AMP
BUFFER
HPA
CLIP
CP208 4.43M BPF
CP207 2H DELAY
CP204 1H DELAY
CP205 3.4M LPF
CP206 LC DELAY
CP209 1.5M LPF
CP210 5.06 BPF
TP201
TP204
TP205
TP206
TP207
TP211
REC 9V
PB 9V
9.5V
COLOR
AUTO
S201
SECAM:3.7(3.7)
PAL:7.2(7.2)
Q205
Q206
Q207
Q210
Q211
Q212
Q213
Q214
Q215
Q217
Q220
Q221
Q222
Q225
Q226
Q227
Q228
Q229
Q230
Q234
Q235
D202
D203
D205
D206
D207
D208
D209

* VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN ( ) ARE MEASURED IN RECORD MODE.

REC VIDEO SIGNAL
REC CHROMA SIGNAL
REC LUMINANCE

WAVEFORMS

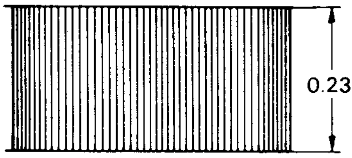
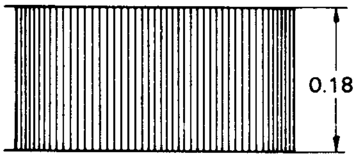
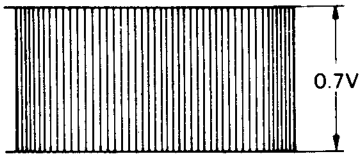
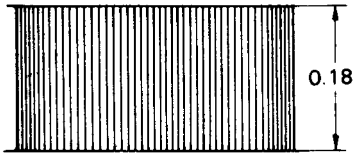
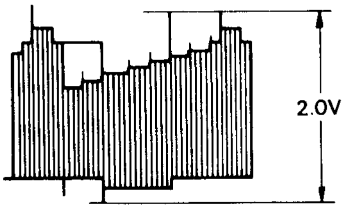
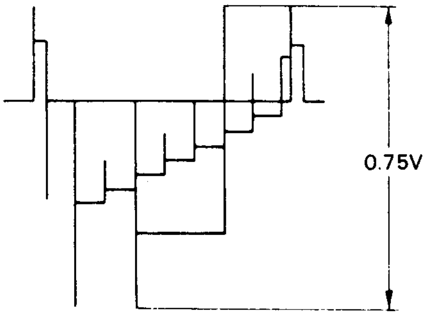
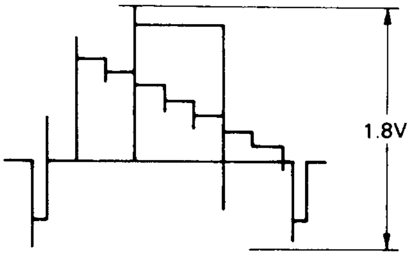
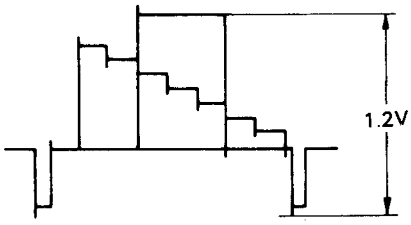
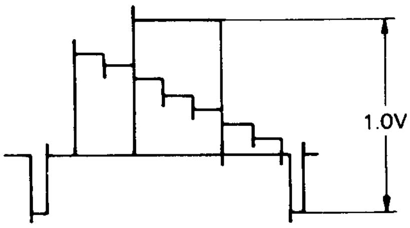

IC203 HT-4239
IC204 M51454L
Q210
Q211
Q213
Q214
Q215
Q217
Q220
Q222
Q225
Q226
Q228
Q229
Q230
Q234
Q235
TP206
TP207
TP211
S201
COLOR
AUTO
EE VIDEO AMP
PB/EE SW
SQUELCH
Y/C MIX
PEAK CLIP
DYNAMIC DEEMPH
NOISE CLIP
REC/PB SW
VIDEO AMP
SYNC SEPA
AGC DET
AGC AMP
PB/REC SW
FM DEMOD
LIMIT
HI PASS LIMIT
BUFFER
PB LEAKAGE PREVENT
KILLER AMP
REC MAIN CONV KILLER AMP
KILLER DET
PB KILLER AMP
ACC AMP
ACC DET
SW AMP
PB MAIN CONV
1/2 PULSE KILLEE
PB φ DET
PB DECODE
PB 1/8
BURST GATE PULSE GEN
PB/REC SW
REC φ DET 1
PB 1/4
REC φDET 2
160fH VCO
GATE
1/60
443MHZ OSC
1/4
4φ LOGIC
SUB CONV
REC AMP
HPA
CLIP
DEMOD
LIM
CP205 3.4M LPF
CP206 LC DELAY
CP207 2H DELAY
CP208 4.43M BPF
CP209 1.5M LPF
CP210 5.06 BPF
CP211 3.4M LPF
CP212 LC DELAY
X201
CN205
1 PB COLOR OUT
2 GND
3 GND
4 PB COLOR IN
To WHD PG1203
PG206
1 4.43 MHz
2 GND
To SERVO/REGULATOR PG641
CN208
1 AFTER DELAY
2 GND
3 APC
4 ROT
5 SPEED PB
6 GND
7 BEFORE DELAY
To WHD PG1202
PG203
1 REC 9V
2 PB 9V
3 S9.5V
4 GND
5 SP
6 LP
7 SYNC
8 SW25
9 MONITOR CUT
10 SPEED PB
11 REC START
To SERVO/REGULATOR PG1156
CN204
1 S9.5V
2 GND
3 SP
4 LP
5 SYNC
To WHD PG1201
PG207
3 PICTURE CONTROL
2 GND
1 PICTURE CONTROL
To SYSTEM CONTROL PG920
Y/CHROMA P.C.B.

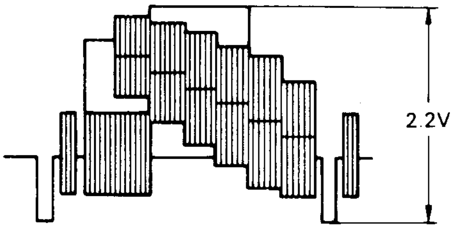
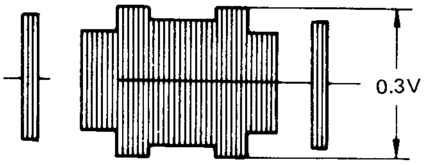
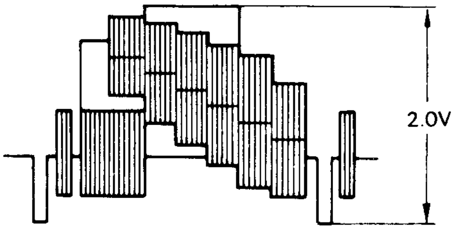
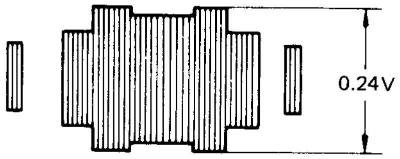
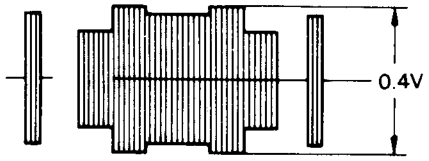
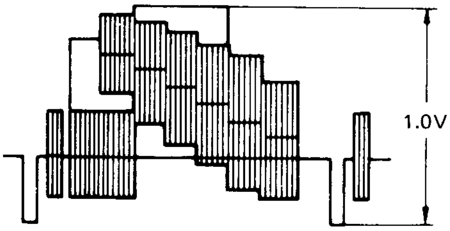
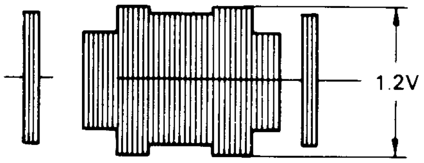
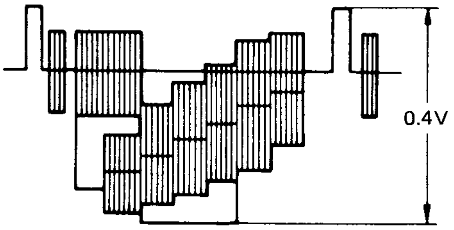
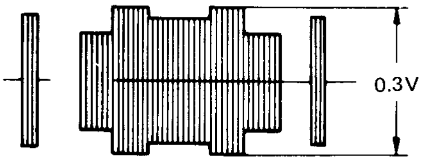
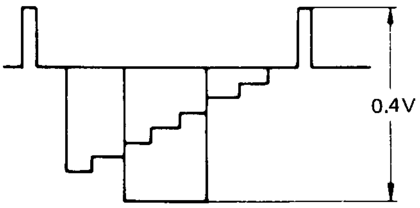
* VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN ( ) ARE MEASURED IN RECORD MODE.

REC VIDEO SIGNAL	PB VIDEO SIGNAL
REC CHROMA SIGNAL	PB CHROMA SIGNAL
REC LUMINANCE	PB LUMINANCE SIGNAL
WAVEFORMS	WAVEFORMS

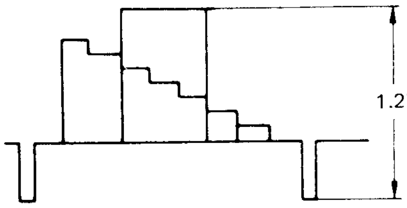
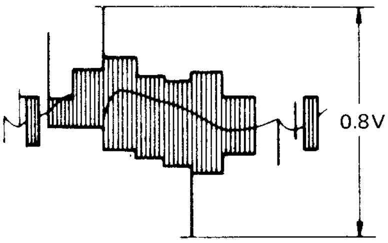
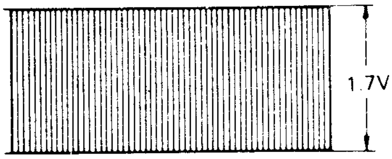
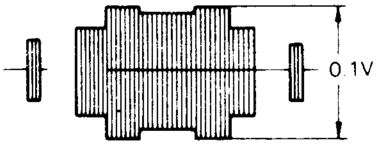
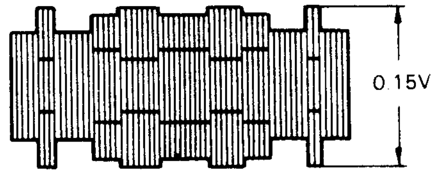
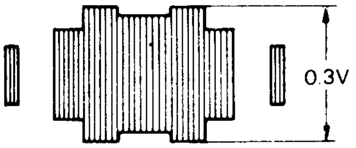
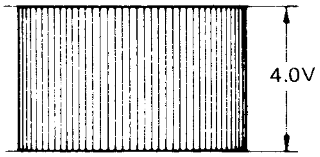
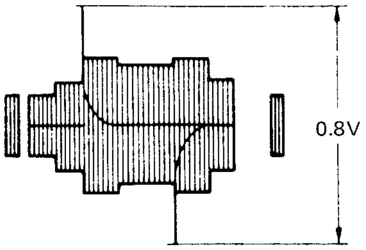
Y•CHROMA CIRCUIT WAVEFORM DIAGRAM

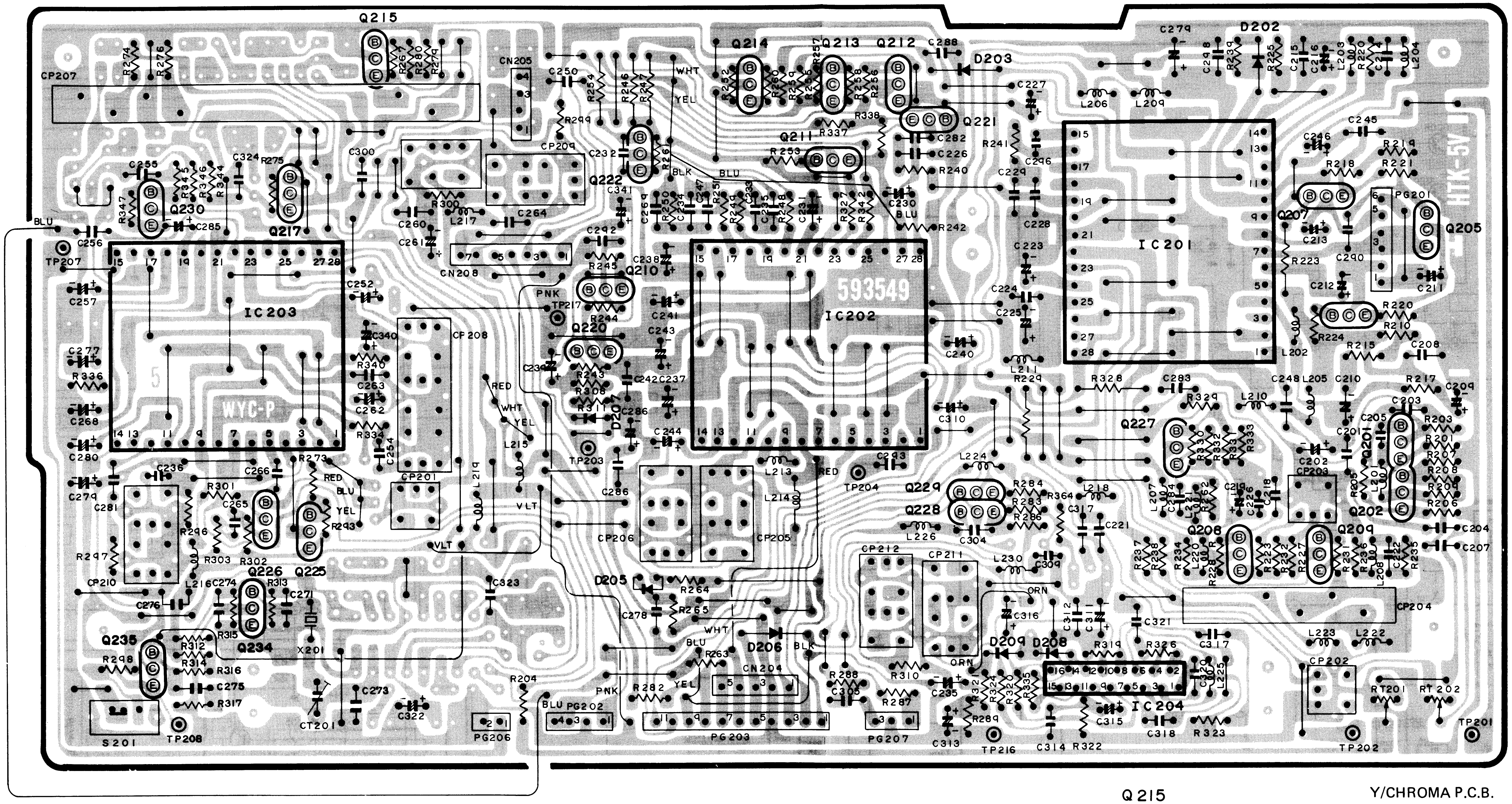
The diagram below shows the waveforms measured in the order of the route of the signal obtained when the color bar signal recorded on the alignment tape is played back. The FM signal measured at the TV-V (1ms/-div) position and the other signals, at the TV-H (20μs/div) position.

1	 IC201-① (PLAY)
2	 IC201-③ (PLAY)
3	 IC201-⑦ (PLAY)
4	 IC202-⑫ (PLAY)
5	 IC202-⑤ (PLAY)
6	 IC202-⑭ (PLAY)
7	 IC202-⑰ (PLAY)
8	 IC202-⑱ (PLAY)
9	 IC202-⑮ IC202-① (PLAY)

10	 IC202-㉔ (PLAY)	15	 IC203-㉗(PLAY)
11	 VIDEO OUT(PLAY)	16	 IC202-㉒ (PLAY)
12	 IC203-⑤ (PLAY)	20	 VIDEO INPUT IC202-② (REC)
13	 IC203-⑧ (PLAY)	21	 IC202-⑤ (REC)
14	 IC203-㉓ (PLAY)	22	 IC202-⑯ (REC)

The diagram below shows the waveforms measured in the order of the route of the signal obtained when the color bar signal (1.0Vp-p) is input to the video input jack and recorded in the LP mode. The FM signal is measured at the TV-V (1 ms/div) position, and the other signals, at the TV-H (20μs/div) position.

23 24	 24 : IC201-⑫ (REC) 23 : IC202-⑮ (REC)	29	 IC203-⑧ (REC)
25	 IC201-① TP205(REC)	30	 IC203-㉓ (REC)
26	 IC201 - ㉘ (REC)	31	 IC203-㉘(REC)
27	 IC201-㉕ (REC)		
28	 IC203-⑦ (REC)		


Q215
CP207
R274
R276
CN205
C250
R254
R246
R247
WHT
YEL
Q214
Q213
Q212
C288
D203
C279
D202
C227
L206
L209
R299
CP209
C232
Q222
R337
R338
Q221
C282
C226
R241
C296
C245
C246
R218
R221
PG201
Q205
Q211
R253
R240
C229
C228
IC201
C255
R275
C324
C300
R300
L217
C264
C341
C230
BLU
R242
C223
Q207
C213
C290
R223
C211
Q230
C285
Q217
C260
C261
CN208
C292
R245
Q210
C238
BLK
PNK
TP217
C224
C225
C212
R220
R210
R224
R215
C208
L202
TP207
C256
C257
IC203
C252
C340
R340
C253
C262
R334
C254
CF208
R244
Q220
C236
R243
R306
R311
C242
C237
C241
C243
593549
IC202
C240
L211
R229
R328
C283
R329
L210
C248
L205
C210
R217
C209
C277
R336
C268
C280
WYC-P
RED
WHT
YEL
L215
L219
D207
C286
C244
TP203
C310
Q227
R330
R332
R333
C203
C205
R203
Q201
C201
C202
CP203
R201
R207
R208
R206
R209
R205
L201
C236
R273
C266
R301
C265
R296
R297
C281
C279
CP210
R303
R302
R293
Q226
Q225
CP201
VLT
CP206
L213
L214
CP205
RED
TP204
C293
L224
Q229
Q228
R284
R283
R286
R364
L226
C304
C317
C221
L218
L207
C219
Q208
Q209
Q202
C204
C207
R237
R238
R234
R228
R236
C274
R313
C271
C276
L216
R312
R315
Q234
Q235
R298
R314
R316
C275
R317
X201
C323
D205
R264
C278
R265
WHT
D206
BLK
CP212
CP211
L230
C309
ORN
C316
C312
C311
C321
CP204
L223
L222
C317
D209
D208
R319
R326
IC204
R263
BLU
CN204
YEL
R282
R288
C305
R310
R287
C235
R289
R324
R325
C315
C318
R323
C313
C314
R322
TP216
CP202
RT201
RT202
TP201
TP202
R204
PNK
BLU
PG202
S201
TP208
CT201
C273
C322
PG206
PG203
PG207
HTK-5V

Y/CHROMA P.C.B.

15	16	17	18
4.7 (4.7)	4.0 (3.7)	0 (0)	0 (5.3
14	13	12	11
7.9 (8.6)	4.2 (4.3)	1.3 (0)	0 (0)

15	16	17	18
2.3 (2.3)	0 (0)	0 (0)	5.4 (54
14	13	12	11
4.3 (4.3)	5.5 (5.5)	7.0 (7.0)	7.3 (7.3

IC201

15	0 (0.3)	14	0 (5.9)
16	0 (1.5)	13	0 (2.9)
17	0 (1.5)	12	0 (6.1)
18	0 (9.2)	11	0 (0)
19	8.0 (0)	10	0 (5.0)
20	0.6 (0)	9	4.6 (0)
21	0 (0)	8	0 (0)
22	0.6 (0)	7	0 (0)
23	0 (0)	6	0.2 (0)
24	0 (0)	5	0.7 (0)
25	0 (8.8)	4	9.5 (0)
26	0 (2.3)	3	9.0 (0)
27	0 (0)	2	0 (0)
28	0 (2.3)	1	5.1 (5.8)

PG201

6	CH1 REC
5	CH1 PB
4	GND
3	GND
2	CH2 PB
1	CH2 REC

To
VIDEO HEAD SELECTOR
PGM 017

F

1	VID
2	
3	
4	VID

To
PG

PG207

1	PICTURE CONTROL
2	GND
3	PICTURE CONTROL

To
SYSTEM CONTROL
PG 920

F

1	S
2	
3	
4	
5	

To
PG

CN208

1	AFTER DELAY
2	GND
3	APC
4	ROT
5	SPEED PB
6	GND
7	BEFORE DELAY

To WHD
PG1202

Q201

B	0 (1.8)
C	0 (8.0)
E	0 (1.2)

Q202

B	0 (2.5)
C	0 (7.2)
E	0 (1.8)

Q205

B	0.7 (0)
C	0 (9.5)
E	0 (0)

Q206

B	0 (0.8)
C	0.6 (0)
E	0 (0)

Q207

B	0.8 (0.8)
C	0 (0)
E	0 (0)

Q208

B	2.4 (0)
C	9.5 (0)
E	1.8 (1.0)

Q209

B	1.8 (0)
C	9.2 (0)
E	1.1 (0)

Q210

B	6.6 (6.6)
C	8.7 (8.7)
E	6.0 (6.0)

Q215

B	6.5 (6.5)
C	0 (0)
E	SECAM: 3.7 (3.7) PAL : 7.2 (7.2)

Q211

B	0 (0)
C	0 (0)
E	0 (0)

Q212

B	5.9 (5.8)
C	0 (0)
E	6.6 (6.5)

Q213

B	4.9 (2.6)
C	9.3 (9.5)
E	5.9 (5.8)

Q214

B	0.2 (0.1)
C	0 (0)
E	0.7 (0.7)

Q217

B	6.3 (6.1)
C	9.5 (9.5)
E	5.6 (5.4)

Q220

B	6.2 (6.2)
C	9.2 (9.2)
E	6.6 (6.6)

Q225

B	0.4 (0.4)
C	3.2 (3.2)
E	0 (0)

Q226

B	2.6 (2.6)
C	7.3 (7.3)
E	2.0 (2.0)

Q221

B	LP: 0.7 (0.7) SP: 0 (0)
C	0 (0)
E	0 (0)

Q227

B	2.0 (0)
C	8.4 (0)
E	1.4 (0)

Q228

B	6.0 (6.0)
C	2.5 (2.5)
E	6.7 (6.7)

Q229

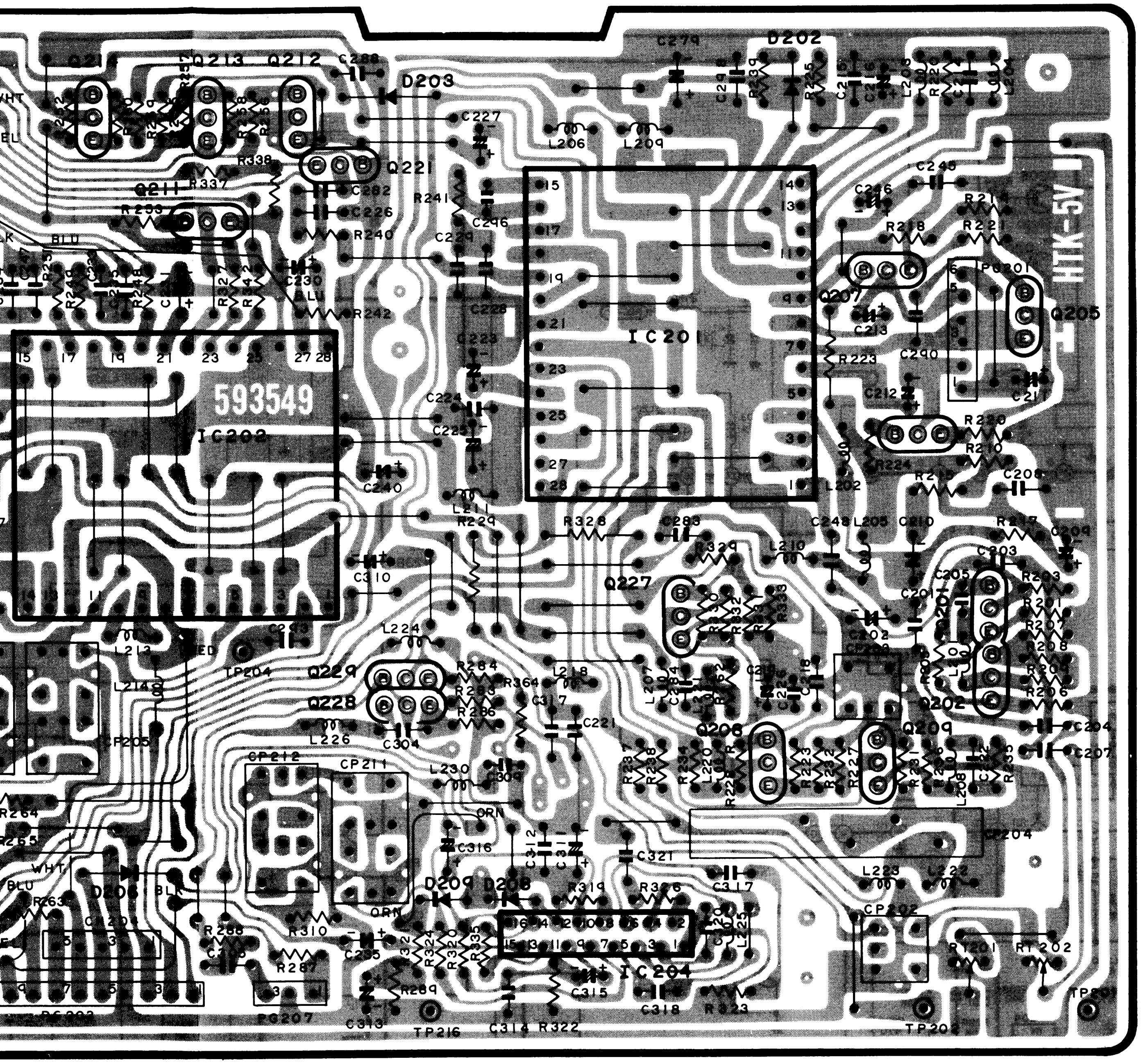
B	2.5 (2.5)
C	7.0 (7.0)
E	1.9 (1.9)

Q230

B	2.6 (2.6)
C	6.5 (6.5)
E	1.9 (1.9)

Q222

B	LP: 0.7 (0.7) SP: 0 (0)
C	0 (0)
E	0 (0)



Q213
Q212
C288
D202
D203
C279
C227
L206
L209
Q221
C292
C226
Q211
R337
R239
R241
R240
C246
C229
C230
R242
C225
C223
IC201
15
17
19
21
23
25
27
28
14
13
11
7
5
3
1
593549
IC202
C224
C222
C240
L211
R229
R328
C283
L210
C248
L205
C310
Q227
L224
L213
TP204
L214
Q229
Q228
L226
C304
R364
L218
C221
Q208
Q209
Q202
CP212
CP211
L230
C316
C312
C321
C317
L223
C204
C207
D209
D208
R319
R306
C235
R289
IC204
C315
C318
R323
RT201
RT202
C313
TP216
C314
R322
TP205
PG207
R288
R310
R287
Q207
Q205
C213
C290
R223
R218
C245
R214
R221
PG201
C212
C217
R224
R226
R210
C208
R217
C209
C203
C205
C201
R203
R207
R208
R206
L202
HTK-5V

Y/CHROMA P.C.B.

Q208

B	2.4 (0)
C	9.5 (0)
E	1.8 (1.0)

Q209

B	1.8 (0)
C	9.2 (0)
E	1.1 (0)

Q210

B	6.6 (6.6)
C	8.7 (8.7)
E	6.0 (6.0)

Q215

B	6.5(6.5)
C	0(0)
E	SECAM:3.7(3.7) PAL : 7.2(7.2)

Q220

B	6.2 (6.2)
C	9.2 (9.2)
E	6.6 (6.6)

Q225

B	0.4 (0.4)
C	3.2 (3.2)
E	0 (0)

Q226

B	2.6 (2.6)
C	7.3 (7.3)
E	2.0 (2.0)

Q221

B	LP:0.7 (0.7) SP: 0(0)
C	0 (0)
E	0 (0)

Q222

B	LP: 0.7 (0.7) SP: 0 (0)
C	0 (0)
E	0 (0)

IC202

15	16	17	18	19	20	21	22	23	24	25	26	27	28
4.7 (4.7)	4.0 (3.7)	0 (0)	0 (5.3)	4.1 (5.0)	4.2 (5.5)	0 (0)	0 (0)	0 (0)	5.6 (4.8)	0 (0)	0 (0)	0.95 (0.95)	8.0 (5.9)
14	13	12	11	10	9	8	7	6	5	4	3	2	1
7.9 (8.6)	4.2 (4.3)	1.3 (0)	0 (0)	4.4 (5.9)	4.4 (5.9)	9.0 (9.0)	0 (0)	9.5 (0)	3.5 (3.5)	0.1 (1.5)	0.3 (0.3)	5.5 (6.0)	5.6 (5.6)

IC203

15	16	17	18	19	20	21	22	23	24	25	26	27	28
2.3 (2.3)	0 (0)	0 (0)	5.4 (5.4)	0 (5.2)	5.5 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0.8 (0.8)	6.4 (6.2)	5.4 (4.5)
14	13	12	11	10	9	8	7	6	5	4	3	2	1
4.3 (4.3)	5.5 (5.5)	7.0 (7.0)	7.3 (7.3)	7.1 (7.1)	9.3 (9.3)	4.4 (6.9)	0 (7.4)	5.1 (5.1)	3.5 (3.5)	3.3 (3.3)	0 (0)	4.8 (4.8)	4.6 (4.6)

IC201

15	0 (0.3)	14	0 (5.9)
16	0 (1.5)	13	0 (2.9)
17	0 (1.5)	12	0 (6.1)
18	0 (9.2)	11	0 (0)
19	8.0 (0)	10	0 (5.0)
20	0.6 (0)	9	4.6 (0)
21	0 (0)	8	0 (0)
22	0.6 (0)	7	0 (0)
23	0 (0)	6	0.2 (0)
24	0 (0)	5	0.7 (0)
25	0 (8.8)	4	9.5 (0)
26	0 (2.3)	3	9.0 (0)
27	0 (0)	2	0 (0)
28	0 (2.3)	1	5.1 (5.8)

IC204

	16	14	12	10	8	6	4	2
SP	5.9 (5.9)	9.5 (9.5)	7.7 (7.7)	4.0 (4.0)	8.0 (8.0)	5.0 (5.0)	4.0 (4.0)	2.6 (2.6)
LP	5.6 (5.6)	9.5 (9.5)	7.7 (7.7)	4.0 (4.0)	8.0 (8.0)	5.0 (5.0)	4.0 (4.0)	2.6 (2.6)
	15	13	11	9	7	5	3	1
SP	3.8 (3.8)	8.9 (8.9)	4.0 (4.0)	7.2 (7.2)	5.0 (5.0)	4.0 (4.0)	0 (0)	2.6 (2.6)
LP	3.8 (3.8)	8.6 (8.6)	4.0 (4.0)	7.2 (7.2)	5.0 (5.0)	4.0 (4.0)	0 (0)	2.6 (2.6)

PG201

6	CHI REC
5	CHI PB
4	GND
3	GND
2	CH2 PB
1	CH2 REC

To
VIDEO HEAD SELECTOR
PGM 017

PG202

1	VIDEO OUT
2	GND
3	GND
4	VIDEO IN

To JACK
PG 1702

PG203

1	REC 9V
2	PB 9V
3	S9.5V
4	GND
5	SP
6	LP
7	SYNC
8	SW 25
9	MONITOR CUT
10	SPEED PB
11	REC START

To
SERVO/REGULATOR
PG1156

PG206

1	4.43MHz
2	GND

To
SERVO/REGULATOR
PG641

CN205

1	PB COLOR OUT
2	GND
3	GND
4	PB COLOR IN

To WHD
PG 1203

PG207

1	PICTURE CONTROL
2	GND
3	PICTURE CONTROL

To
SYSTEM CONTROL
PG 920

PG204

1	S9.5V
2	GND
3	SP
4	LP
5	SYNC

To WHD
PG1201

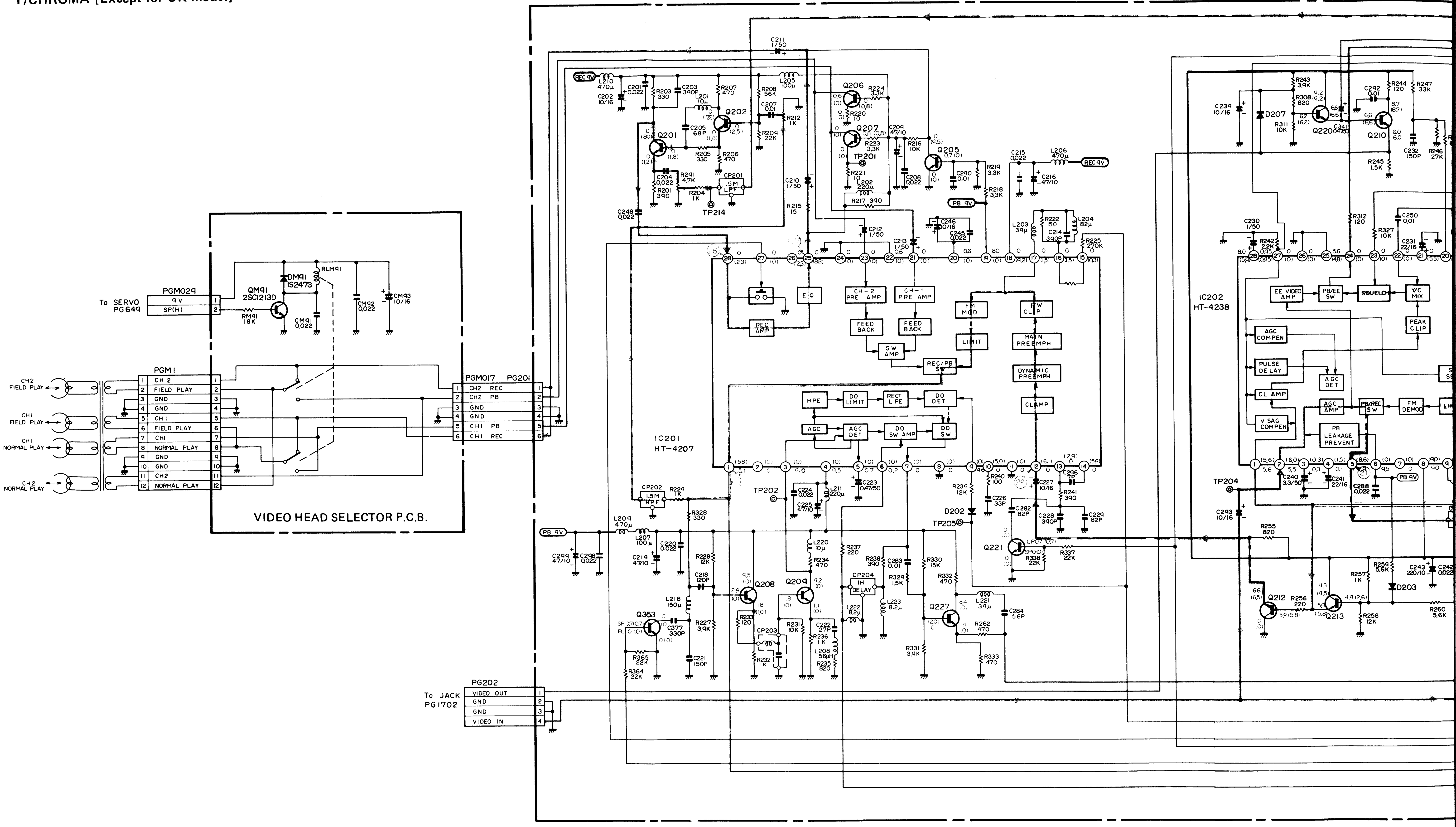
CN208

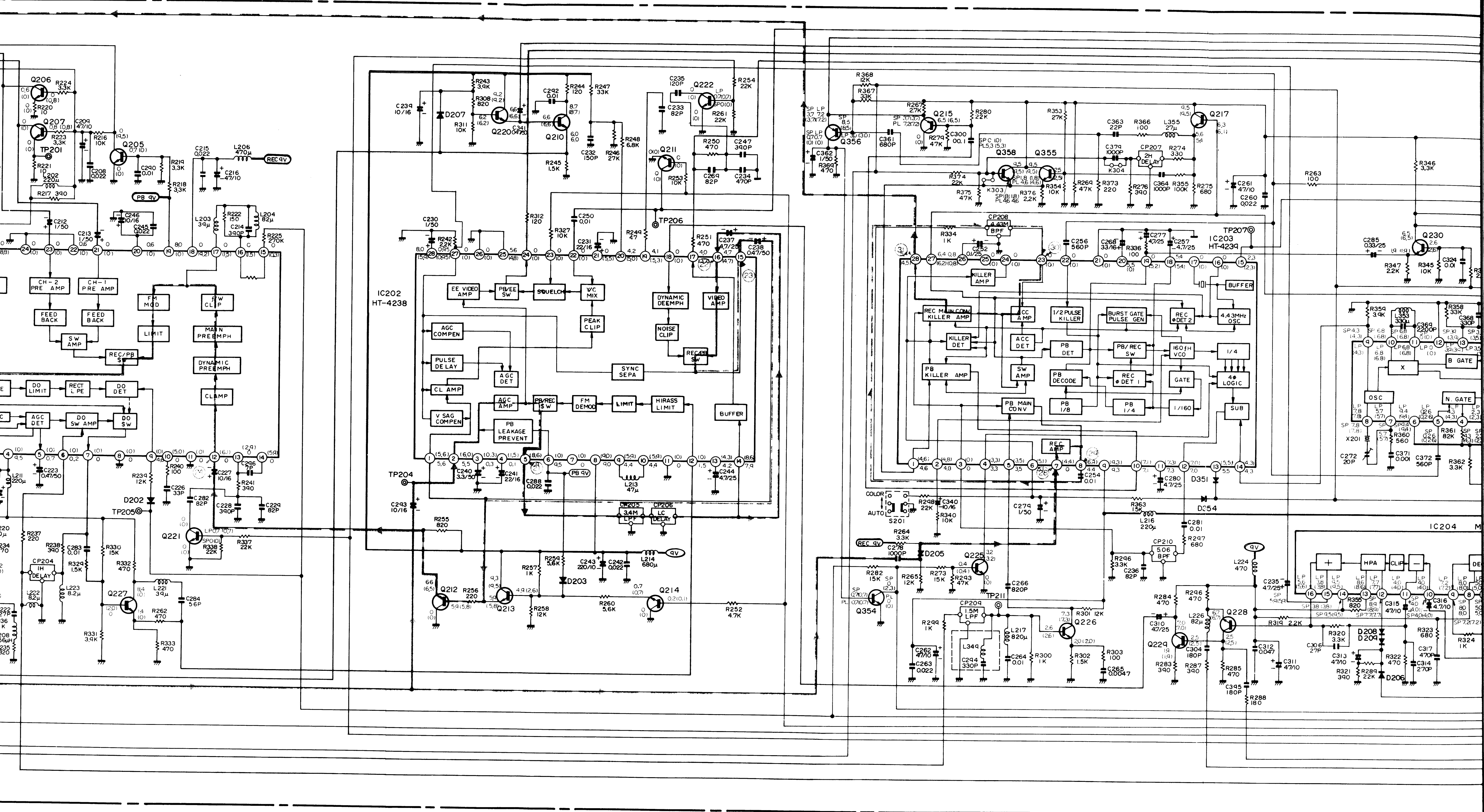
1	AFTER DELAY
2	GND
3	APC
4	ROT
5	SPEED PB
6	GND
7	BEFORE DELAY

To WHD
PG1202

※· VOLTAGES ARE MEASURED INPLAY MODE. AND
VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.

Y/CHROMA [Except for UK model]

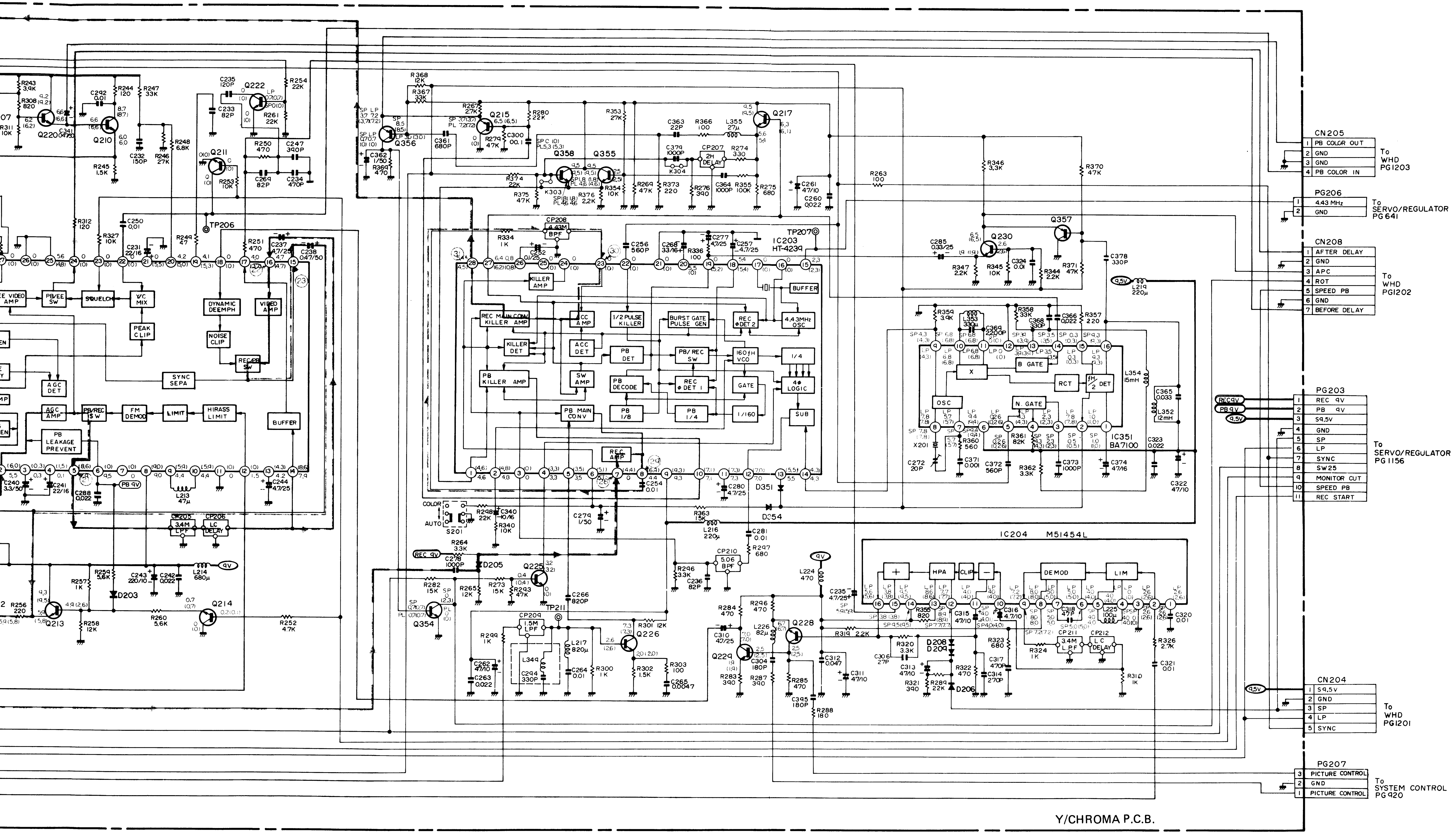

VIDEO HEAD SELECTOR P.C.B.
To SERVO PG649
PGM029
9V
SP(H)
QM91 2SC1213D
DM91 1S2473
RLM91
RM91 18K
CM91 0.022
CM92 0.022
CM93 10/16
PGM1
CH 2
FIELD PLAY
GND
CH 1
NORMAL PLAY
CH2 FIELD PLAY
CH1 FIELD PLAY
CH1 NORMAL PLAY
CH2 NORMAL PLAY
PGM017 PG201
CH2 REC
CH2 PB
CH1 PB
CH1 REC
To JACK PG1702
PG202
VIDEO OUT
VIDEO IN
IC201 HT-4207
IC202 HT-4238
REC 9V
PB 9V
Q201
Q202
Q205
Q206
Q207
Q208
Q209
Q210
Q212
Q213
Q220
Q221
Q227
Q353
D202
D203
D207
TP201
TP202
TP204
TP205
TP214
CP201 1.5M LPF
CP202 1.5M HPF
CP203
CP204 1H DELAY
EQ
REC AMP
CH-2 PRE AMP
CH-1 PRE AMP
FEED BACK
SW AMP
FM MOD
LIMIT
REC/PB SW
P/W CLIP
MAIN PREEMPH
DYNAMIC PREEMPH
CLAMP
HPE
DO LIMIT
RECT LPF
DO DET
AGC
AGC DET
DO SW AMP
DO SW
EE VIDEO AMP
PB/EE SW
SQUELCH
Y/C MIX
PEAK CLIP
AGC COMPEN
PULSE DELAY
AGC DET
CL AMP
AGC AMP
PB/REC SW
FM DEMOD
V SAG COMPEN
PB LEAKAGE PREVENT
L210 470μ
L205 100μ
L201 10μ
L206 470μ
L203 39μ
L204 82μ
L209 470μ
L207 100μ
L211 220μ
L218 150μ
L220 10μ
L221 39μ
L222 8.2μ
L223 8.2μ
L208 56μH
R203 330
R207 470
R208 56K
R212 1K
R209 22K
R224 3.3K
R220 10
R233 3.3K
R216 10K
R219 3.3K
R218 3.3K
R205 330
R206 470
R291 4.7K
R204 1K
R201 390
R215 15
R221 10
R217 390
R222 150
R225 270K
R229 1K
R328 330
R228 12K
R227 3.9K
R237 220
R234 470
R238 390
R329 1.5K
R330 15K
R332 470
R239 12K
R240 100
R241 390
R337 22K
R338 22K
R262 470
R333 470
R331 3.9K
R231 10K
R236 1K
R235 820
R232 1K
R233 120
R365 22K
R364 22K
R243 3.9K
R308 820
R311 10K
R244 120
R247 33K
R246 27K
R245 1.5K
R312 120
R327 10K
R242 22K
R255 820
R257 1K
R259 5.6K
R256 220
R258 12K
R260 5.6K
C211 1/50
C201 0.022
C202 10/16
C203 390P
C205 68P
C207 0.01
C204 0.022
C209 47/10
C208 0.022
C290 0.01
C215 0.022
C216 47/10
C210 1/50
C212 1/50
C213 1/50
C246 10/16
C245 0.022
C214 390P
C248 0.022
C299 47/10
C298 0.022
C219 47/10
C220 0.022
C218 120P
C377 330P
C221 150P
C224 0.022
C225 47/10
C223 0.47/50
C283 0.01
C222 27P
C226 33P
C282 82P
C227 10/16
C236 7P
C228 390P
C229 82P
C284 56P
C239 10/16
C292 0.01
C341 0.047
C232 150P
C230 1/50
C250 0.01
C231 22/16
C240 3.3/50
C241 22/16
C288 0.022
C293 10/16
C243 220/10
C242 0.022


Q206
R224 3.3K
Q207
R220 10
R223 3.3K
C209 47/10
R216 10K
Q205
TP201
R221 10
L202 220μ
R217 390
C208 0.022
C240 0.01
R219 3.3K
R218 3.3K
PB 9V
C215 0.022
L206 470μ
REC 9V
C216 47/10
C212 1/50
C213 1/50
C246 10/16
C245 0.022
L203 39μ
R222 150
C214 390P
L204 82μ
R225 270K
CH-2 PRE AMP
CH-1 PRE AMP
FEED BACK
SW AMP
REC/PB SW
FM MOD
LIMIT
W/W CLIP
MAIN PREEMPH
DYNAMIC PREEMPH
CLAMP
DO LIMIT
RECT L.PE
DO DET
AGC DET
DO SW AMP
DO SW
C223 0.47/50
L211 220μ
R234 12K
D202
TP205
C226 33P
R240 100
C227 10/16
C236 7P
R241 390
C228 390P
C229 82P
C282 82P
Q221
R338 22K
R337 22K
R237 220
C283 0.01
R238 390
CP204 1H DELAY
L222 8.2μ
L223 8.2μ
R329 1.5K
R330 15K
R332 470
Q227
L221 39μ
R262 470
C284 56P
R331 3.9K
R333 470
C239 10/16
D207
R243 3.9K
R308 820
R311 10K
Q220
C341 0.47/50
C292 0.01
R244 120
R247 33K
Q210
R245 1.5K
C232 150P
R246 27K
R248 6.8K
C235 120P
Q222
C233 82P
R254 22K
R261 22K
R250 470
C247 390P
Q211
R253 10K
C269 82P
C234 470P
TP206
R312 120
R327 10K
C250 0.01
C231 22/16
R249 47
R251 470
C237 47/25
C238 0.47/50
C230 1/50
R242 2.2K
IC202 HT-4238
EE VIDEO AMP
PB/EE SW
SQUELCH
Y/C MIX
PEAK CLIP
DYNAMIC DEEMPH
NOISE CLIP
VIDEO AMP
REC/PB SW
AGC COMPEN
PULSE DELAY
CL AMP
AGC DET
SYNC SEPA
V SAG COMPEN
AGC AMP
PB/REC SW
FM DEMOD
LIMIT
HIRASS LIMIT
BUFFER
PB LEAKAGE PREVENT
TP204
C240 3.3/50
C241 22/16
C288 0.022
PB 9V
L213 47μ
C244 4.7/25
C243 10/16
R255 820
CP205 3.4M LPF
CP206 LC DELAY
R259 5.6K
C243 220/10
C242 0.022
L214 680μ
9V
R257 1K
D203
Q212
R256 220
Q213
R258 12K
R260 5.6K
Q214
R252 4.7K
R368 12K
R367 33K
R267 2.7K
Q215
R280 22K
Q356
C361 680P
R279 47K
C300 0.01
C362 1/50
R369 470
Q358
Q355
R353 27K
C363 22P
R366 100
L355 27μ
Q217
C379 1000P
CP207 2H DELAY
R274 330
K304
R374 22K
R375 47K
K303
R376 2.2K
R354 10K
R269 47K
R373 220
R276 390
C364 1000P
R355 100K
R275 680
C261 47/10
C260 0.022
R263 100
R346 3.3K
CP208 4.43M BPF
R334 1K
C252 0.1/25
C256 560P
C268 33/16
R336 100
C277 47/25
C257 4.7/25
TP207
IC203 HT-4239
KILLER AMP
REC MAIN CONV KILLER AMP
ACC AMP
1/2 PULSE KILLER
BURST GATE PULSE GEN
REC φDET 2
4.43MHz OSC
BUFFER
KILLER DET
ACC DET
PB DET
PB/REC SW
160fH VCO
1/4
PB KILLER AMP
SW AMP
PB DECODE
REC φDET 1
GATE
4φ LOGIC
PB 1/8
PB 1/4
1/160
PB MAIN CONV
SUB
REC AMP
C254 0.01
C280 4.7/25
D351
COLOR
AUTO
S201
R298 22K
C340 10/16
R340 10K
C279 1/50
R363 15K
D354
L216 220μ
C281 0.01
R297 680
REC 9V
C278 1000P
R264 3.3K
D205
Q225
R296 3.3K
CP210 5.06 BPF
C236 82P
R282 15K
R265 12K
R273 15K
R243 47K
C266 820P
TP211
Q354
CP209 1.5M LPF
L217 820μ
R299 1K
C262 47/10
C263 0.022
L349
C294 330P
C264 0.01
R300 1K
Q226
R301 12K
R302 1.5K
R303 100
C265 0.0047
Q230
C285 0.33/25
R347 2.2K
R345 10K
C324 0.01
R359 3.9K
L353 330μ
C369 2200P
R358 33K
C368 330P
X
B GATE
OSC
N. GATE
X201
R360 560
C371 0.001
C372 560P
R361 82K
R362 3.3K
C272 20P
IC204
9V
L224 470
C235 47/25
HPA
CLIP
R284 470
R296 470
L226 82μ
Q228
C310 47/25
Q229
C304 180P
R283 390
R287 390
R285 470
C395 180P
R288 180
C312 0.047
C311 47/10
R319 2.2K
C306 27P
R320 3.3K
C313 47/10
R321 390
R289 22K
D208
D209
D206
R322 470
R355 820
C315 47/10
C316 4.7/10
R323 680
C317 470P
C314 270P
R324 1K

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.

REC VIDEO SIGNAL
REC CHROMA SIGNAL
REC LUMINANCE SIGNAL

WAVEFORMS


Y/CHROMA P.C.B.
CN205
1 PB COLOR OUT
2 GND
3 GND
4 PB COLOR IN
To WHD PG1203
PG206
1 4.43 MHz
2 GND
To SERVO/REGULATOR PG641
CN208
1 AFTER DELAY
2 GND
3 APC
4 ROT
5 SPEED PB
6 GND
7 BEFORE DELAY
To WHD PG1202
PG203
1 REC 9V
2 PB 9V
3 S9.5V
4 GND
5 SP
6 LP
7 SYNC
8 SW25
9 MONITOR CUT
10 SPEED PB
11 REC START
To SERVO/REGULATOR PG1156
CN204
1 S9.5V
2 GND
3 SP
4 LP
5 SYNC
To WHD PG1201
PG207
3 PICTURE CONTROL
2 GND
1 PICTURE CONTROL
To SYSTEM CONTROL PG920
IC203 HT-4239
IC351 BA7100
IC204 M51454L
TP206
TP207
TP211
Q210
Q211
Q213
Q214
Q215
Q217
Q220
Q222
Q225
Q226
Q228
Q229
Q230
Q354
Q355
Q356
Q357
Q358
PB/EE SW
SQUELCH
VC MIX
PEAK CLIP
DYNAMIC DEEMPH
NOISE CLIP
VIDEO AMP
REC/PB SW
SYNC SEPA
AGC DET
AGC AMP
PB/REC SW
FM DEMOD
LIMIT
HIRASS LIMIT
PB LEAKAGE PREVENT
BUFFER
CP205 3.4M LPF
CP206 LC DELAY
CP208 4.43M BPF
KILLER AMP
REC MAIN CONV KILLER AMP
KILLER DET
ACC AMP
ACC DET
SW AMP
PB KILLER AMP
PB MAIN CONV
REC AMP
1/2 PULSE KILLER
PB DET
PB DECODE
PB 1/8
BURST GATE PULSE GEN
PB/REC SW
REC φDET 1
PB 1/4
REC φDET 2
160 fH VCO
GATE
1/160
4.43MHz OSC
1/4
4φ LOGIC
SUB
BUFFER
X
B GATE
OSC
RCT
fH/2 DET
N. GATE
HPA
CLIP
DEMOD
LIM
CP207 2H DELAY
CP209 1.5M LPF
CP210 5.06 BPF
CP211 3.4M LPF
CP212 LC DELAY
S201 COLOR AUTO
D203
D205
D206
D208
D209
D351
D354
X201
REC 9V
PB 9V
9V
9.5V

* VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.

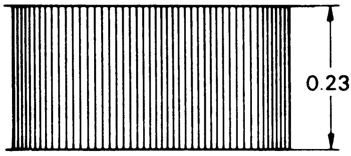
REC VIDEO SIGNAL
REC CHROMA SIGNAL
REC LUMINANCE SIGNAL
WAVEFORMS

PB VIDEO SIGNAL
PB CHROMA SIGNAL
PB LUMINANCE SIGNAL
WAVEFORMS

Y•CHROMA CIRCUIT WAVEFORM DIAGRAM

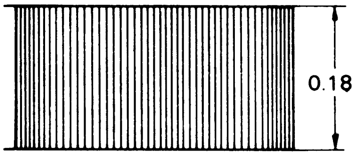
The diagram below shows the waveforms measured in the order of the route of the signal obtained when the color bar signal recorded on the alignment tape is played back. The FM signal measured at the TV-V (1ms/-div) position and the other signals, at the TV-H (20μs/div) position.

1



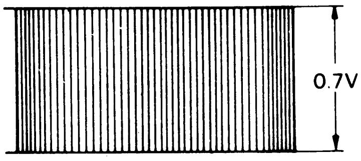
IC201-① (PLAY)

2



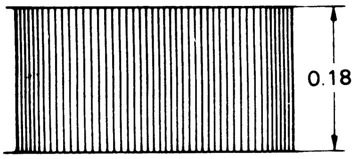
IC201-③ (PLAY)

3



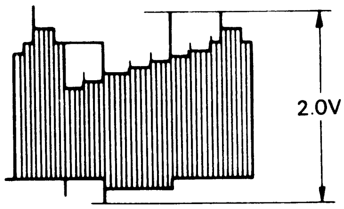
IC201-⑦ (PLAY)

4



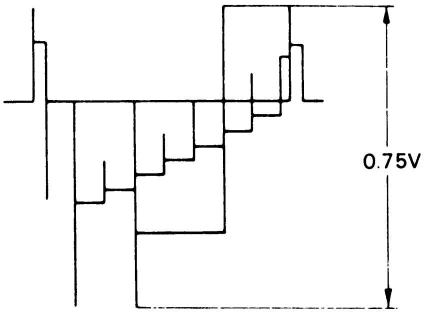
IC202-⑫ (PLAY)

5



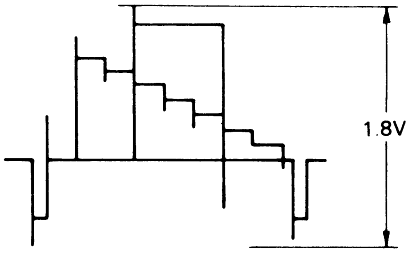
IC202-⑤ (PLAY)

6



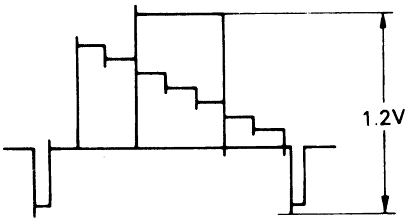
IC202-⑭ (PLAY)

7



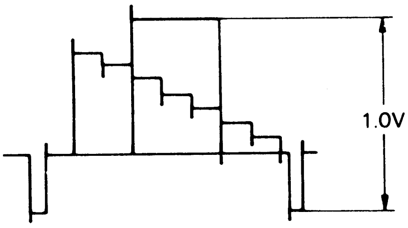
IC202-⑰ (PLAY)

8

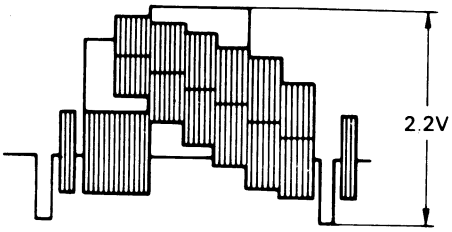
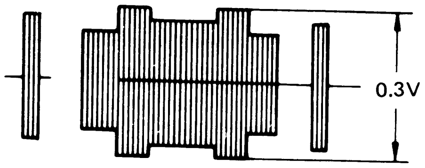
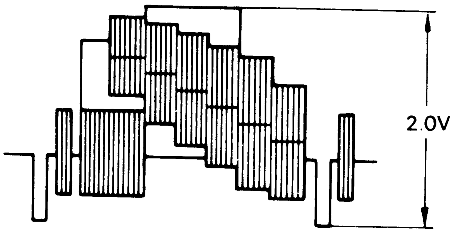
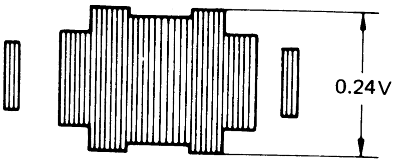
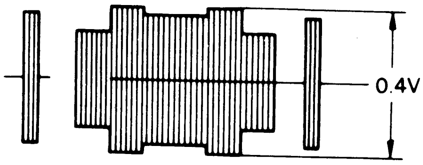
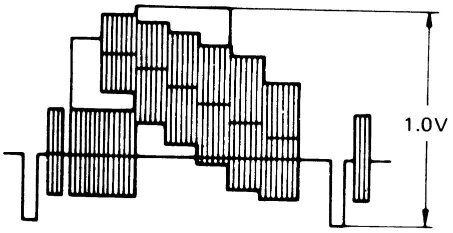
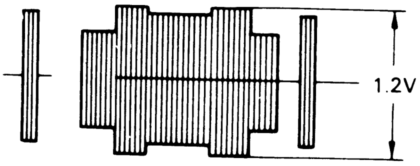
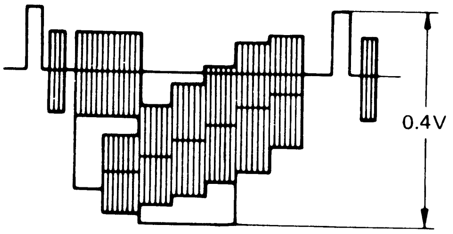
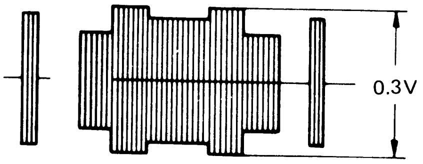
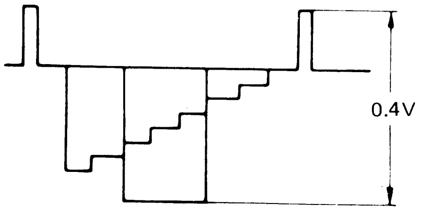


IC202-⑱ (PLAY)

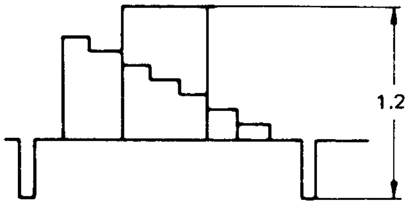
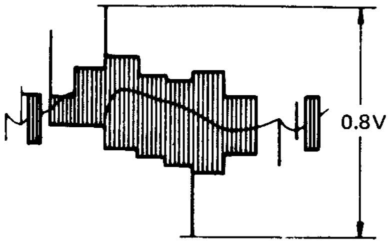
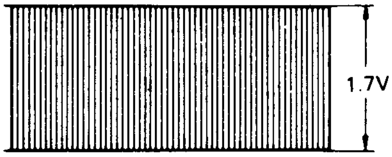
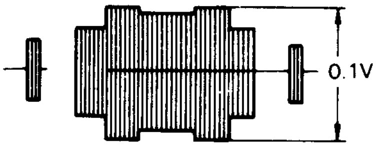
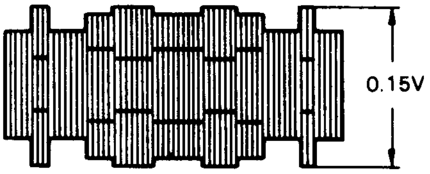
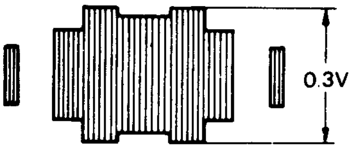
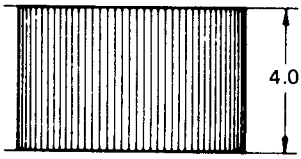
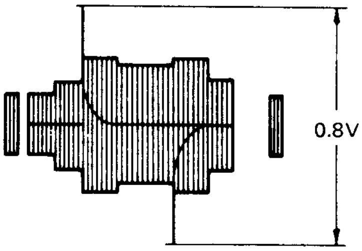
9

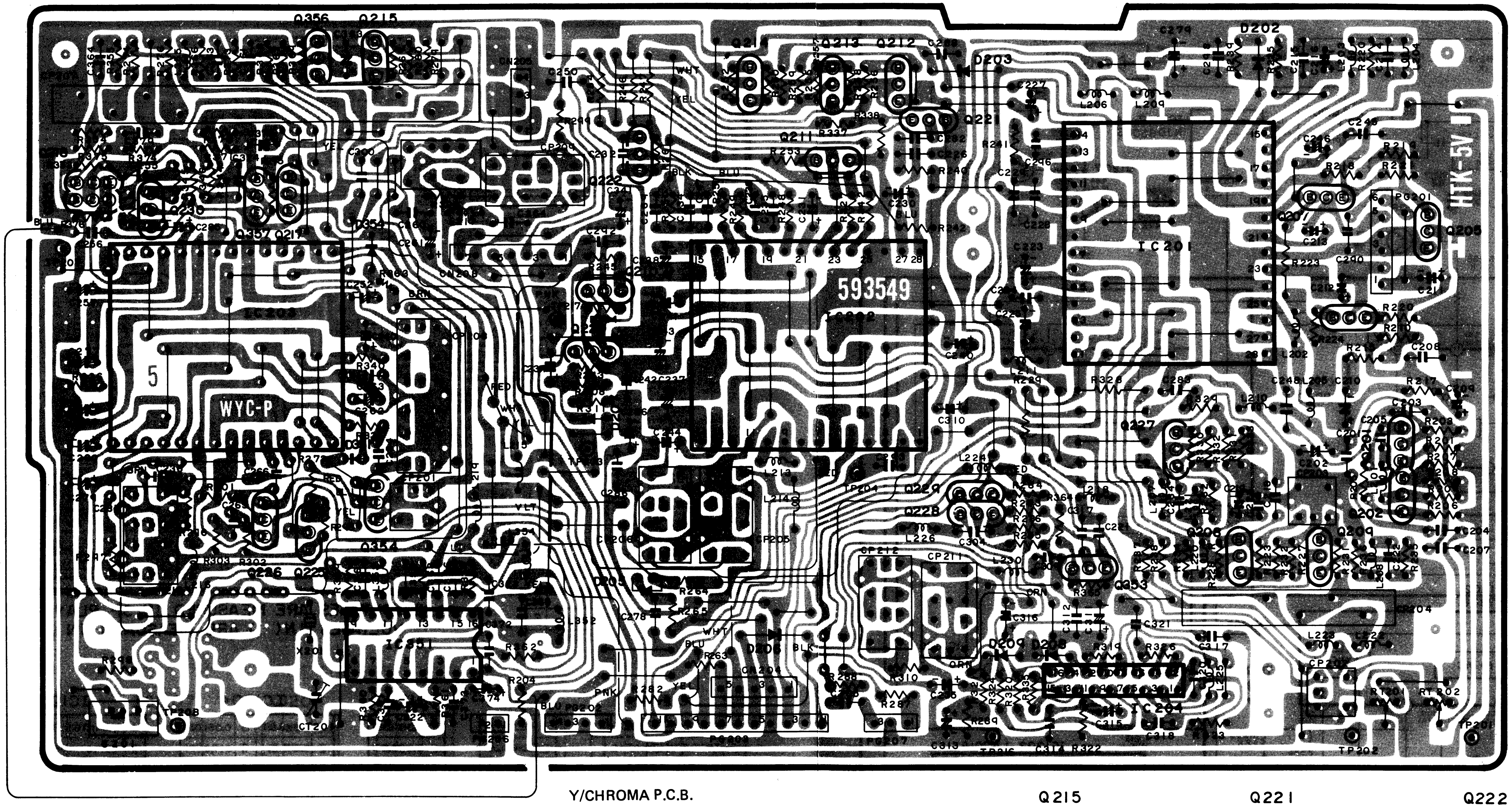


IC202-⑮
IC202-① (PLAY)

10	 IC202-㉔ (PLAY)	**15**	 IC203-㉗(PLAY)
11	 VIDEO OUT(PLAY)	**16**	 IC202-㉒ (PLAY)
12	 IC203-⑤ (PLAY)	**20**	 VIDEO INPUT IC202-② (REC)
13	 IC203-⑧ (PLAY)	**21**	 IC202-⑤ (REC)
14	 IC203-㉓ (PLAY)	**22**	 IC202-⑯ (REC)

The diagram below shows the waveforms measured in the order of the route of the signal obtained when the color bar signal (1.0Vp-p) is input to the video input jack and recorded in the LP mode. The FM signal is measured at the TV-V (1 ms/div) position, and the other signals, at the TV-H (20μs/div) position.

23 **24**	 24 : IC201-⑫ (REC) 23 : IC202-⑮ (REC)	**29**	 IC203-⑧ (REC)
25	 IC201-① TP205(REC)	**30**	 IC203-㉓ (REC)
26	 IC201 - ㉘ (REC)	**31**	 IC203-㉘(REC)
27	 IC201-㉕ (REC)		
28	 IC203-⑦ (REC)		


Q356
Q215
Q211
Q213
Q212
Q221
Q222
Q354
Q357
Q217
Q225
Q226
Q223
Q227
Q228
Q229
Q353
Q207
Q208
Q209
Q205
D202
D203
IC201
IC202
IC203
IC301
IC204
593549
WYC-P
HTK-5V
CN208
CP201
CP211
CP212
PG201
PG207
TP201
TP202
BLU
WHT
YEL
BLK
RED
PNK
ORN
BRN

Y/CHROMA P.C.B.

15	16	17	18
47 (4.7)	4.0 (3.7)	0 (0)	0 (5.
14	13	12	11
7.9 (8.6)	4.2 (4.3)	1.3 (0)	0 (0

15	16	17	18
2.3 (2.3)	0 (0)	0 (0)	5.4 (5.
14	13	12	11
4.3 (4.3)	5.5 (5.5)	7.0 (7.0)	7.3 (7

IC201

14	0 (5.9)	15	0 (0.3)
13	0 (2.9)	16	0 (1.5)
12	0 (6.1)	17	0 (1.5)
11	0 (0)	18	0 (9.2)
10	0 (5.0)	19	8.0 (0)
9	4.6 (0)	20	0.6 (0)
8	0 (0)	21	0 (0)
7	0 (0)	22	0.6 (0)
6	0.2 (0)	23	0 (0)
5	0.7 (0)	24	0 (0)
4	9.5 (0)	25	0 (8.8)
3	90 (0)	26	0 (2.3)
2	0 (0)	27	0 (0)
1	51 (58)	28	0 (23)

PG201

6	CHI REC
5	CHI PB
4	GND
3	GND
2	CH2 PB
1	CH2 REC

To
VIDEO HEAD SELECTOR
PGM017

PG207

1	PICTURE CONTROL
2	GND
3	PICTURE CONTROL

To
SYSTEM CONTROL
PG920

CN208

1	AFTER DELAL
2	GND
3	APC
4	ROT
5	SPEED PB
6	GND
7	BEFORE DELAY

To
WHD
PG1202

1	V
2	G
3	G
4	V

T
F

1	S
2	G
3	S
4	L
5	S

T
W
F

Q201

B	0 (1.8
C	0 (8.0)
E	0 (1.2)

Q202

B	0 (2.5)
C	0 (7.2)
E	0 (1.8)

Q205

B	0.7 (0)
C	0 (9.5)
E	0 (0)

Q206

B	0 (0.8)
C	0.6 (0)
E	0 (0)

Q207

B	0.8 (0.8)
C	0 (0)
E	0 (0)

Q208

B	2.4 (0)
C	9.5 (0)
E	1.8 (1.0)

Q209

B	1.8 (0)
C	9.2 (0)
E	1.1 (0)

Q210

B	6.6 (6.6)
C	8.7 (8.7)
E	6.0 (6.0)

Q211

B	0 (0)
C	0 (0)
E	0 (0)

Q212

B	5.9 (5.8)
C	0 (0)
E	6.6 (6.5)

Q213

B	4.9 (2.6)
C	9.3 (9.5)
E	5.9 (5.8)

Q214

B	0.2 (0.1)
C	0 (0)
E	0.7 (0.7)

Q217

B	6.3 (6.1)
C	9.5 (9.5)
E	5.6 (5.4)

Q220

B	6.2 (6.2)
C	9.2 (9.2)
E	6.6 (6.6)

Q225

B	0.4 0.4
C	3.2 (3.2)
E	0 (0)

Q226

B	2.6 (2.6)
C	7.3 (7.3)
E	2.0 (2.0)

Q227

B	2.0 (0)
C	8.4 (0)
E	1.4 (0)

Q228

B	6.0 (6.0)
C	2.5 (2.5)
E	6.7 (6.7)

Q229

B	2.5 (2.5)
C	7.0 (7.0)
E	1.9 (1.9)

Q230

B	2.6 (2.6)
C	6.5 (6.5)
E	1.9 (1.9)

Q357

B	4.0 (4.0)
C	0 (0)
E	4.7 (4.7)

Q215

	SECAM	PAL
B	6.5 (6.5)	6.5 (6.5)
C	0 (0)	0 (0)
E	3.7 (3.7)	7.2 (7.2)

Q221

	SECAM	PAL
B	0.7 (0.7)	0 (0)
C	0 (0)	0 (0)
E	3.7 (3.7)	7.2 (7.2)

Q222

	SECAM	PAL
B	0.7 (0.7)	0 (0)
C	0 (0)	0 (0)
E	0 (0)	0 (0)

Q353

B	SECAM: 0.7 (0.7) PAL : 0 (0)
C	0 (0)
E	0 (0)

Q354

B	SECAM: 0.7 (0.7) PAL : 0.7 (0)
C	SECAM: 0 (2.3) PAL : 0 (0)
E	0 (0)

Q355

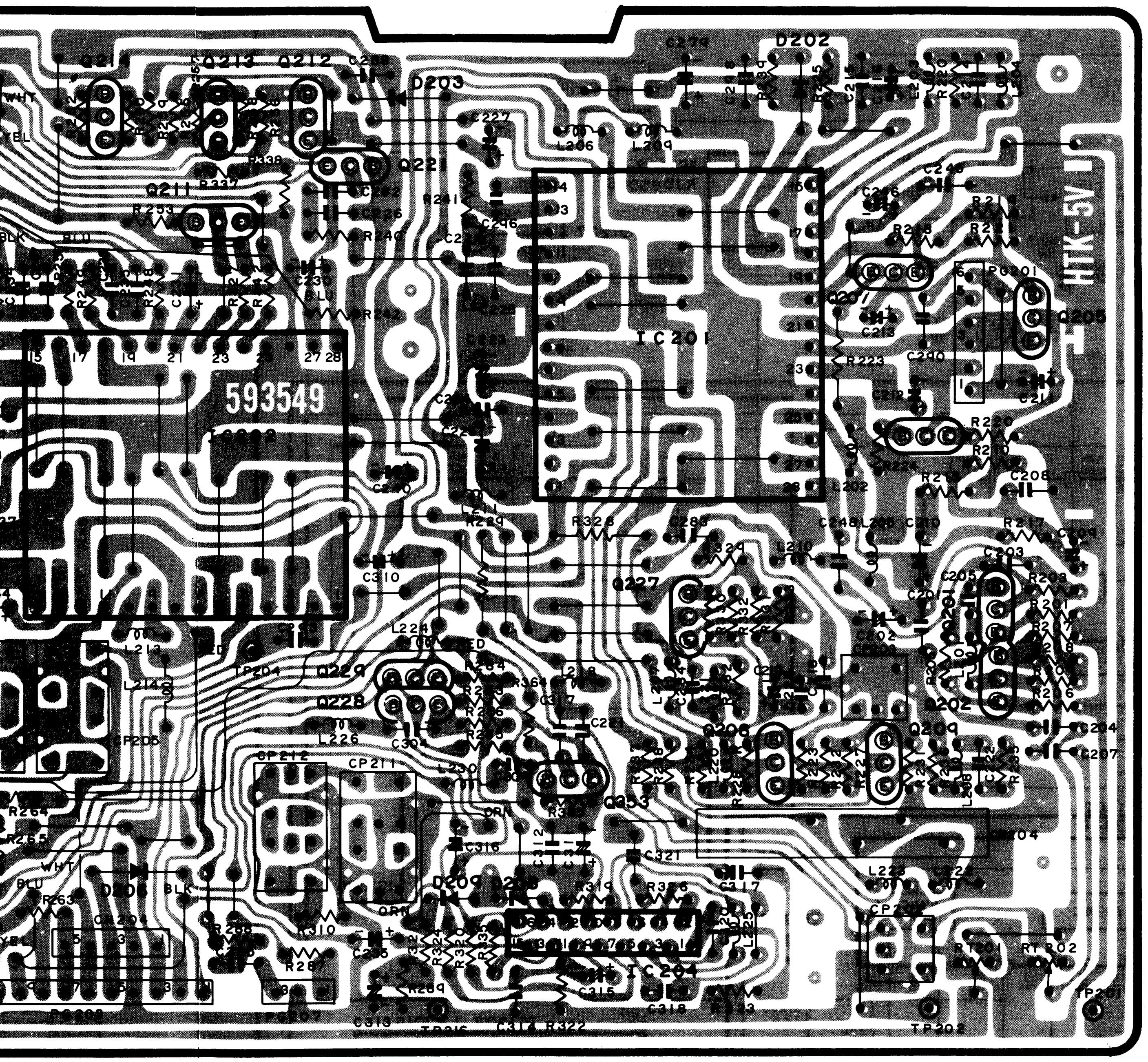
B	2.5 (2.5)
C	9.5 (9.5)
E	SECAM: 1.8 (1.8) PAL : 4.6 (4.6)

Q356

	SECAM	PAL
B	8.5 (8.5)	3.0 (3.0)
C	0.7 (0.7)	0 (0)
E	3.7 (3.7)	7.2 (7.2)

Q358

B	SECAM: 0 (0) PAL : 5.3 (5.3)
C	9.5 (9.5)
E	SECAM: 1.8 (1.8) PAL : 4.6 (4.6)



C.B.

Q208

B	2.4 (0)
C	9.5 (0)
E	1.8 (1.0)

Q209

B	1.8 (0)
C	9.2 (0)
E	1.1 (0)

Q217

B	6.3 (6.1)
C	9.5 (9.5)
E	5.6 (5.4)

Q220

B	6.2 (6.2)
C	9.2 (9.2)
E	6.6 (6.6)

Q230

B	2.6 (2.6)
C	6.5 (6.5)
E	1.9 (1.9)

Q357

B	4.0 (4.0)
C	0 (0)
E	4.7 (4.7)

Q215

	SECAM	PAL
B	6.5 (6.5)	6.5 (6.5)
C	0 (0)	0 (0)
E	3.7 (3.7)	7.2 (7.2)

Q353

B	SECAM: 0.7 (0.7) PAL : 0 (0)
C	0 (0)
E	0 (0)

Q221

	SECAM	PAL
B	0.7 (0.7)	0 (0)
C	0 (0)	0 (0)
E	3.7 (3.7)	7.2 (7.2)

Q354

B	SECAM: 0.7 (0.7) PAL : 0.7 (0)
C	SECAM: 0 (2.3) PAL : 0 (0)
E	0 (0)

Q356

	SECAM	PAL
B	8.5 (8.5)	3.0 (3.0)
C	0.7 (0.7)	0 (0)
E	3.7 (3.7)	7.2 (7.2)

Q222

	SECAM	PAL
B	0.7 (0.7)	0 (0)
C	0 (0)	0 (0)
E	0 (0)	0 (0)

Q355

B	2.5 (2.5)
C	9.5 (9.5)
E	SECAM: 1.8 (1.8) PAL : 4.6 (4.6)

Q358

B	SECAM: 0 (0) PAL : 5.3 (5.3)
C	9.5 (9.5)
E	SECAM: 1.8 (1.8) PAL : 4.6 (4.6)

IC202

15	16	17	18	19	20	21	22	23	24	25	26	27	28
47 (4.7)	4.0 (3.7)	0 (0)	0 (5.3)	4.1 (5.0)	4.2 (5.5)	0 (0)	0 (0)	0 (0)	5.6 (4.8)	0 (0)	0 (0)	0.95 (0.95)	8.0 (5.9)
14	13	12	11	10	9	8	7	6	5	4	3	2	1
7.9 (8.6)	4.2 (4.3)	1.3 (0)	0 (0)	4.4 (5.9)	4.4 (5.9)	9.0 (9.0)	0 (0)	9.5 (0)	3.5 (3.5)	0.1 (1.5)	0.3 (0.3)	5.5 (6.0)	5.6 (5.6)

IC203

15	16	17	18	19	20	21	22	23	24.	25	26	27	28
2.3 (2.3)	0 (0)	0 (0)	5.4 (5.4)	0 (5.2)	5.5 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0.8 (0.8)	6.4 (6.2)	5.4 (4.5)
14	13	12	11	10	9	8	7	6	5	4	3	2	1
4.3 (4.3)	5.5 (5.5)	7.0 (7.0)	7.3 (7.3)	7.1 (7.1)	9.3 (9.3)	4.4 (6.9)	0 (7.4)	5.1 (5.1)	3.5 (3.5)	3.3 (3.3)	0 (0)	4.8 (4.8)	4.6 (4.6)

IC201

14	0 (5.9)	15	0 (0.3)
13	0 (2.9)	16	0 (1.5)
12	0 (6.1)	17	0 (1.5)
11	0 (0)	18	0 (9.2)
10	0 (5.0)	19	8.0 (0)
9	4.6 (0)	20	0.6 (0)
8	0 (0)	21	0 (0)
7	0 (0)	22	0.6 (0)
6	0.2 (0)	23	0 (0)
5	0.7 (0)	24	0 (0)
4	9.5 (0)	25	0 (8.8)
3	90 (0)	26	0 (2.3)
2	0 (0)	27	0 (0)
1	51 (58)	28	0 (23)

IC351

	9	10	11	12	13	14	15	16
PAL	4.3 (4.3)	6.8 (6.8)	6.8 (6.8)	0 (0)	3.9 (3.9)	3.5 (3.5)	0.3 (0.3)	9.3 (9.3)
SECAM	4.3 (4.3)	6.8 (6.8)	6.8 (6.8)	0 (0)	3.9 (3.9)	3.5 (3.5)	0.3 (0.3)	9.3 (9.3)
	8	7	6	5	4	3	2	1
PAL	7.8 (7.8)	5.7 (5.7)	9.4 (9.4)	0.26 (0.26)	4.3 (4.3)	2.3 (2.3)	7.8 (7.8)	1.0 (1.0)
SECAM	7.8 (7.8)	5.7 (5.7)	9.4 (9.4)	0.26 (0.26)	4.3 (4.3)	2.3 (2.3)	0.5 (0.5)	1.0 (1.0)

PG201

6	CHI REC
5	CHI PB
4	GND
3	GND
2	CH2 PB
1	CH2 REC

To
VIDEO HEAD SELECTOR
PGM017

PG207

1	PICTURE CONTROL
2	GND
3	PICTURE CONTROL

To
SYSTEM CONTROL
PG920

CN208

1	AFTER DELAL
2	GND
3	APC
4	ROT
5	SPEED PB
6	GND
7	BEFORE DELAY

To
WHD
PG1202

PG202

1	VIDEO OUT
2	GND
3	GND
4	VIDEO IN

To JACK
PG1702

CN204

1	S9.5V
2	GND
3	SP
4	LP
5	SYNC

To
WHD
PG1201

PG203

1	REC 9V
2	PB 9V
3	S9.5V
4	GND
5	SP
6	LP
7	SYNC
8	SW25
9	MONITOR CUT
10	SPEED PB
11	REC START

To
SERVO/REGULATOR
PG1156

PG206

1	4.43MHZ
2	GND

To
SERVO/REGULATOR
PG641

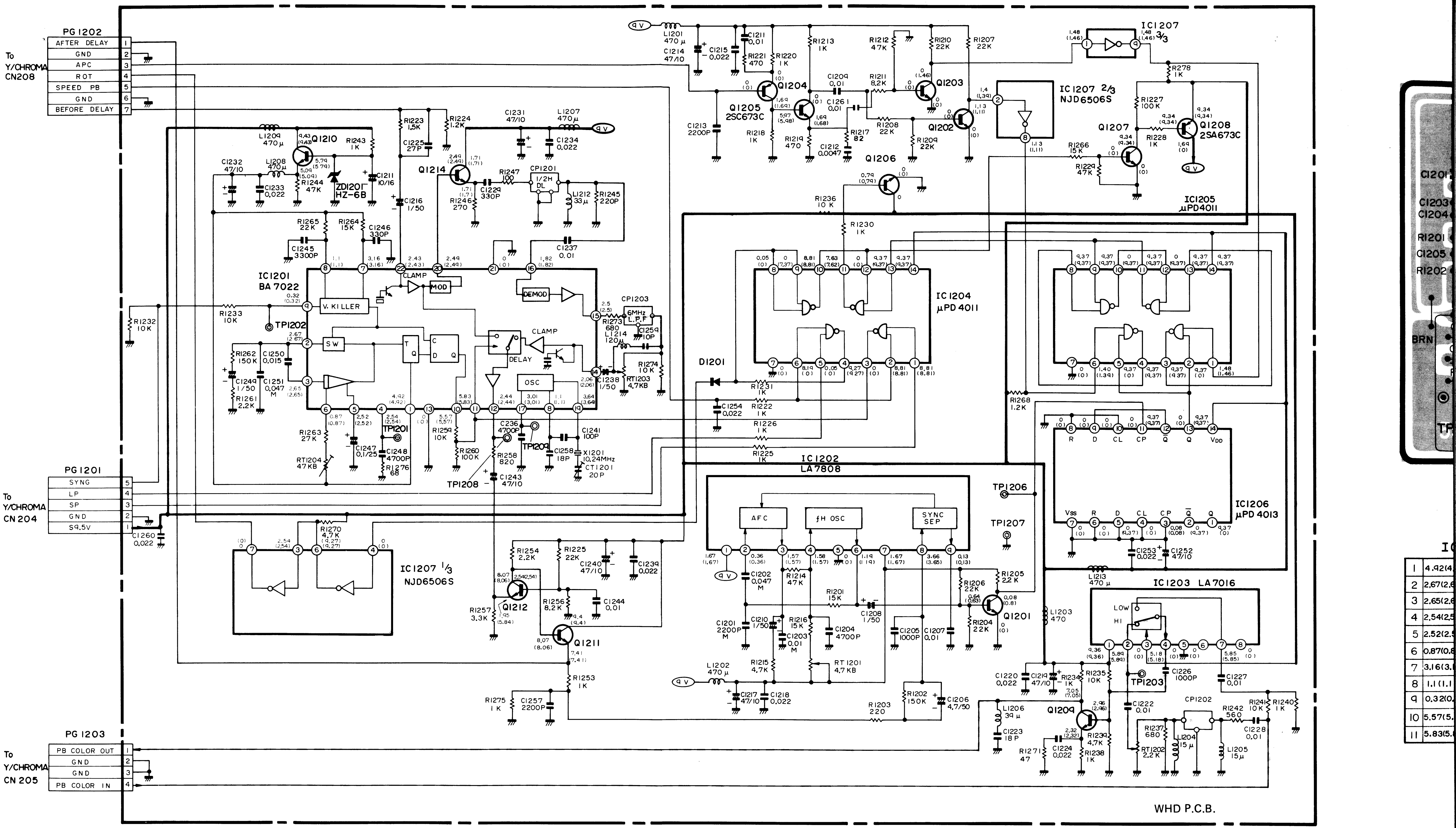
CN205

1	PB COLOR OUT
2	GND
3	GND
4	PB COLOR IN

To
WHD
PG1203

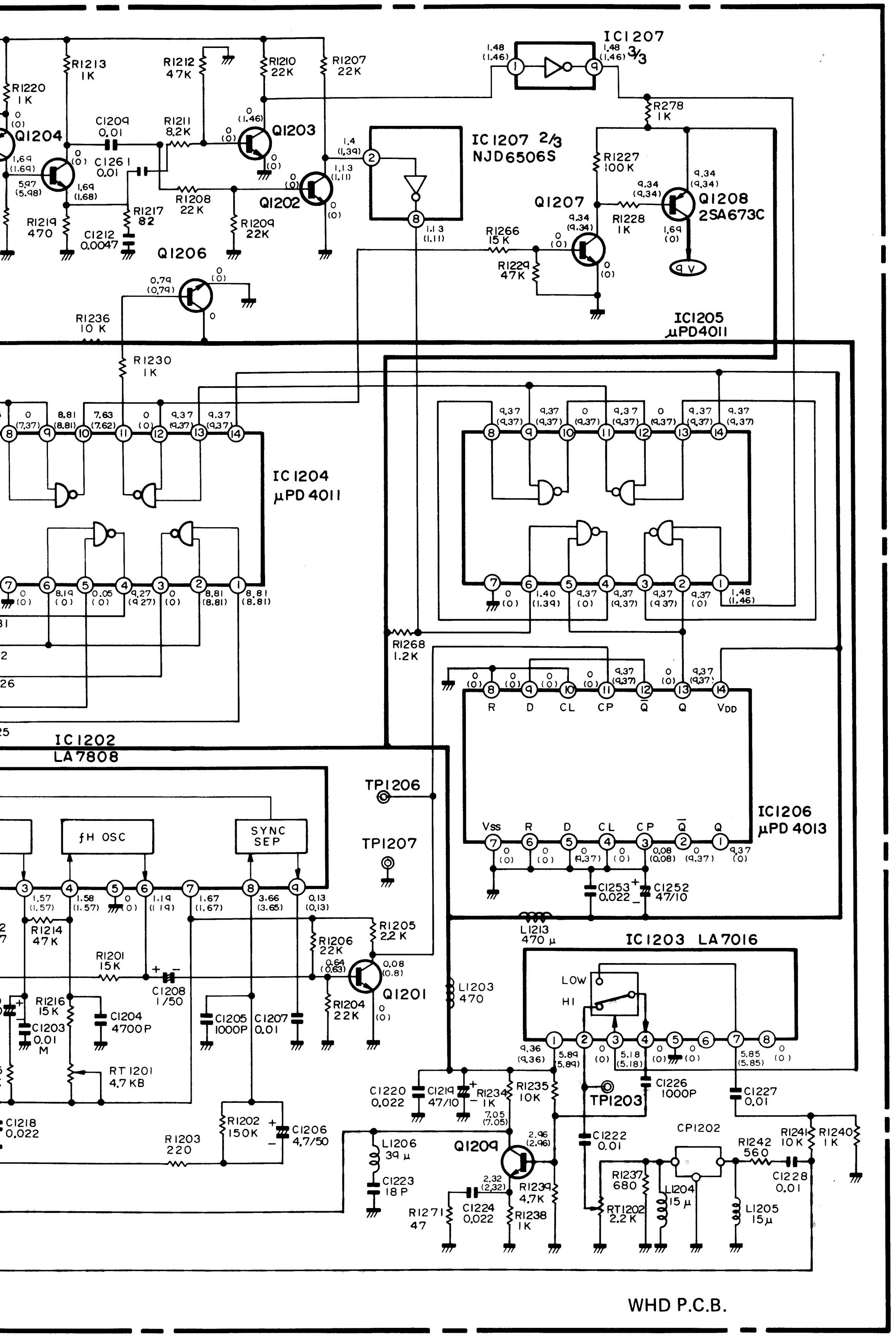
※ VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.

WHD


PG1202
AFTER DELAY
GND
APC
ROT
SPEED PB
GND
BEFORE DELAY
To Y/CHROMA CN208
PG1201
SYNG
LP
SP
GND
S9.5V
To Y/CHROMA CN204
PG1203
PB COLOR OUT
GND
GND
PB COLOR IN
To Y/CHROMA CN205
IC1201 BA7022
V. KILLER
SW
CLAMP
MOD
DEMOD
DELAY
OSC
Q1210
Q1214
Q1211
Q1212
ZD1201 HZ-6B
CP1201 1/2H DL
CP1203 6MHz L.P.F
X1201 10.24MHz
TP1201
TP1202
TP1208
TP1209
IC1207 1/3 NJD6506S
IC1207 2/3 NJD6506S
IC1207 3/3
Q1204
Q1205 2SC673C
Q1203
Q1202
Q1206
Q1207
Q1208 2SA673C
D1201
IC1204 µPD4011
IC1205 µPD4011
IC1206 µPD4013
IC1202 LA7808
AFC
fH OSC
SYNC SEP
Q1201
TP1206
TP1207
IC1203 LA7016
LOW
HI
TP1203
Q1209
CP1202
WHD P.C.B.
1 4.92(4
2 2.67(2.6
3 2.65(2.6
4 2.54(2.5
5 2.52(2.5
6 0.87(0.8
7 3.16(3.
8 1.1(1.1
9 0.32(0.
10 5.57(5.
11 5.83(5.

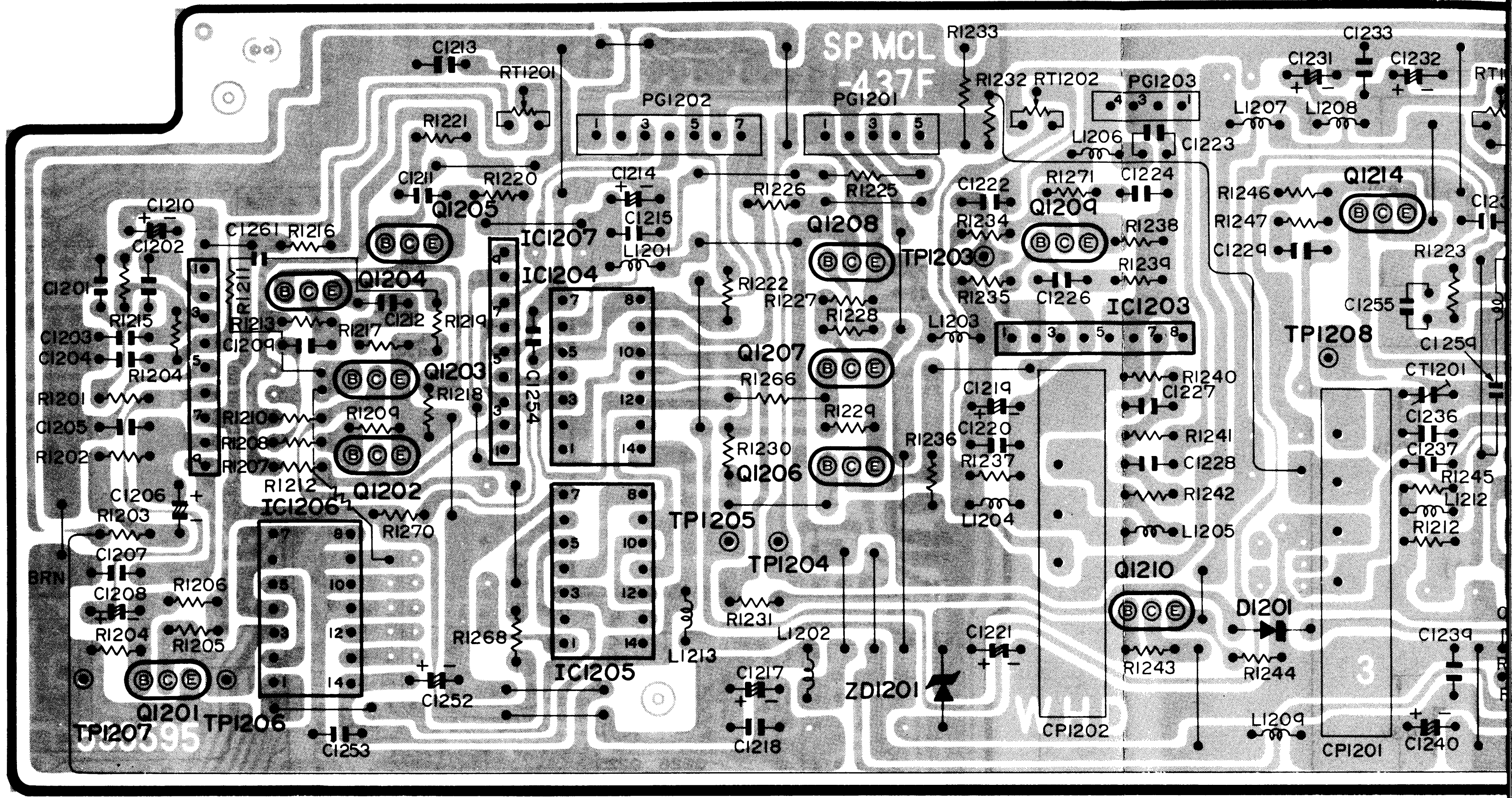
※ VOLTAGES ARE MEASURED IN SP PLAY MODE AND
VOLTAGES IN ( ) ARE MEASURED IN LP PLAY MODE.

PB VIDEO SIGNAL
PB CHROMA SIGNAL


IC1207 3/3
IC1207 2/3
NJD6506S
Q1204
Q1203
Q1202
Q1206
Q1207
Q1208
2SA673C
IC1205
μPD4011
IC1204
μPD4011
IC1202
LA7808
fH OSC
SYNC SEP
TP1206
TP1207
IC1206
μPD 4013
IC1203 LA7016
LOW
HI
Q1201
Q1209
TP1203
CP1202
WHD P.C.B.

PB VIDEO SIGNAL

PB CHROMA SIGNAL


SP MCL
-437F
PG1202
PG1201
PG1203
IC1207
IC1204
IC1203
IC1205
IC1206
Q1201
Q1202
Q1203
Q1204
Q1205
Q1206
Q1207
Q1208
Q1209
Q1210
Q1214
TP1203
TP1204
TP1205
TP1206
TP1207
TP1208
ZD1201
D1201
CP1201
CP1202
CT1201
BRN

※ VOLTAGES ARE MEASURED IN SP PLAY MODE AND
VOLTAGES IN( ) ARE MEASURED IN LP PLAY MODE.

IC1201

1	4.92(4.92)	12	2.44(2.44)
2	2.67(2.67)	13	0 (0)
3	2.65(2.65)	14	2.06(2.06)
4	2.54(2.54)	15	2.5(2.5)
5	2.52(2.52)	16	1.82(1.82)
6	0.87(0.87)	17	3.01(3.01)
7	3.16(3.16)	18	3.13(3.13)
8	1.1(1.1)	19	3.64(3.64)
9	0.32(0.32)	20	2.49(2.49)
10	5.57(5.57)	21	0(0)
11	5.83(5.83)	22	2.43(2.43)

IC1202

1	1.67(1.67)
2	0.36(0.36)
3	1.57(1.57)
4	1.58(1.57)
5	0(0)
6	1.19(1.19)
7	1.67(1.67)
8	3.66(3.65)
9	0.13(0.13)

IC1203

1	9.36(9.36)
2	5.89(5.89)
3	0(0)
4	5.18(5.18)
5	0(0)
6	0(0)
7	5.85(5.85)
8	0 (0)

IC1204

1	8.81(8.81)	8	0.05(0)
2	8.81(8.81)	9	0(7.37)
3	0 (0)	10	8.81(8.81)
4	9.27(9.27)	11	7.63(7.62)
5	0.05 (0)	12	0(0)
6	8.19 (0)	13	9.37(9.37)
7	0 (0)	14	9.37(9.37)

IC1205

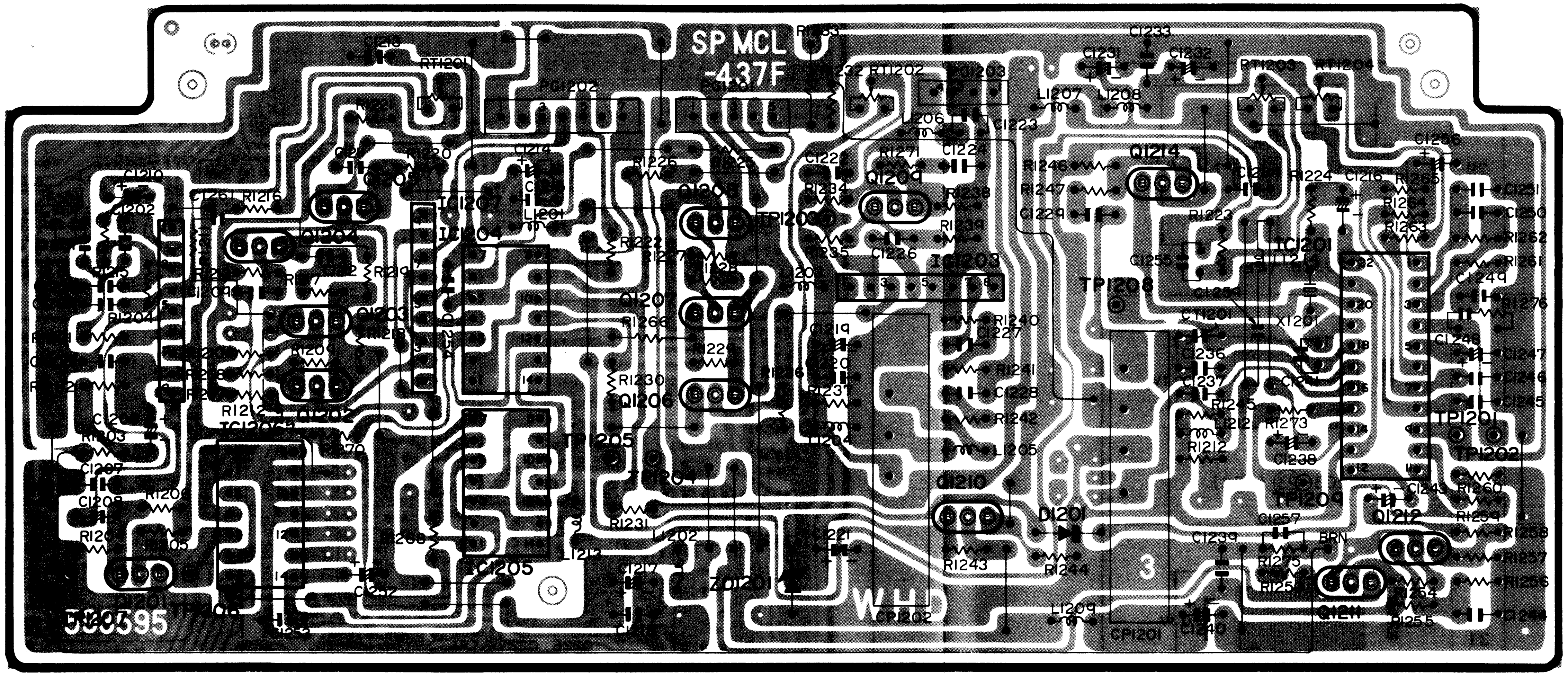
1	1.48(1.46)	8	9.37(9.37)
2	9.37(0)	9	9.37(9.37)
3	9.37(9.37)	10	0(9.37)
4	9.37(9.37)	11	9.37(9.37)
5	9.37 (0)	12	0 (9.37)
6	1.40(1.39)	13	9.37(9.37)
7	0 (0)	14	9.37(9.37)

IC1206

1	9.37 (0)	8	0 (0)
2	0 (9.37)	9	0 (0)
3	0.08(0.08)	10	0 (0)
4	0 (0)	11	0 (0)
5	0 (9.37)	12	9.37(9.37)
6	0 (0)	13	0(0)
7	0 (0)	14	9.37(9.37)

IC1207

1	1.48(1.46)
2	1.4(1.39)
3	2.54(2.54)
4	0(0)
5	0(0)
6	9.27(9.27)
7	0(0)
8	1.13(1.11)
9	1.48(1.46)


SP MCL
-437F
WHD
589595
PG1202
PG1203
RT1201
RT1202
RT1203
RT1204
C1231
C1232
C1233
C1223
C1224
C1226
C1227
C1228
C1229
C1235
C1236
C1237
C1238
C1239
C1240
C1244
C1245
C1246
C1247
C1248
C1249
C1250
C1251
C1255
C1256
C1257
L1201
L1202
L1206
L1207
L1208
L1209
R1202
R1203
R1204
R1206
R1215
R1216
R1218
R1219
R1221
R1222
R1223
R1224
R1226
R1227
R1230
R1231
R1234
R1235
R1237
R1238
R1239
R1240
R1241
R1242
R1243
R1244
R1245
R1246
R1247
R1254
R1255
R1256
R1257
R1258
R1260
R1261
R1262
R1263
R1264
R1265
R1266
R1271
R1273
R1274
R1276
IC1201
IC1203
IC1204
IC1205
IC1206
IC1207
Q1201
Q1202
Q1203
Q1204
Q1206
Q1207
Q1209
Q1210
Q1211
Q1212
Q1214
D1201
ZD1201
X1201
TP1201
TP1202
TP1204
TP1205
TP1206
TP1207
TP1208
TP1209
CP1201
CP1202
BRN
3

※ VOLTAGES ARE MEASURED IN SP PLAY MODE AND
VOLTAGES IN( ) ARE MEASURED IN LP PLAY MODE.

WHD P.C.B.

PG1201

1	S9.5V
2	GND
3	SP
4	LP
5	SYNC

To Y/CHROMA
CN 204

PG1202

1	AFTER DELAY
2	GND
3	APC
4	ROT
5	SPEED PB
6	GND
7	BEFORE DELAY

To Y/CHROMA
CN 208

PG1203

1	PB COLOR OUT
2	GND
3	GND
4	PB COLOR IN

To Y/CHROMA
CN 205

IC1201

1	4.92(4.92)	12	2.44(2.44)
2	2.67(2.67)	13	0 (0)
3	2.65(2.65)	14	2.06(2.06)
4	2.54(2.54)	15	2.5(2.5)
5	2.52(2.52)	16	1.82(1.82)
6	0.87(0.87)	17	3.01(3.01)
7	3.16(3.16)	18	3.13(3.13)
8	1.1(1.1)	19	3.64(3.64)
9	0.32(0.32)	20	2.49(2.49)
10	5.57(5.57)	21	0(0)
11	5.83(5.83)	22	2.43(2.43)

IC1202

1	1.67(1.67)
2	0.36(0.36)
3	1.57(1.57)
4	1.58(1.57)
5	0(0)
6	1.19(1.19)
7	1.67(1.67)
8	3.66(3.65)
9	0.13(0.13)

IC1203

1	9.36(9.36)
2	5.89(5.89)
3	0 (0)
4	5.18(5.18)
5	0(0)
6	0(0)
7	5.85(5.85)
8	0 (0)

IC1204

1	8.81(8.81)	8	0.05(0)
2	8.81(8.81)	9	0(7.37)
3	0 (0)	10	8.81(8.81)
4	9.27(9.27)	11	7.63(7.62)
5	0.05 (0)	12	0(0)
6	8.19 (0)	13	9.37(9.37)
7	0 (0)	14	9.37(9.37)

IC1205

1	1.48(1.46)	8	9.37(9.37)
2	9.37(0)	9	9.37(9.37)
3	9.37(9.37)	10	0(9.37)
4	9.37(9.37)	11	9.37(9.37)
5	9.37 (0)	12	0 (9.37)
6	1.40(1.39)	13	9.37(9.37)
7	0 (0)	14	9.37(9.37)

IC1206

1	9.37 (0)	8	0 (0)
2	0 (9.37)	9	0 (0)
3	0.08(0.08)	10	0 (0)
4	0 (0)	11	0 (0)
5	0 (9.37)	12	9.37(9.37)
6	0 (0)	13	0(0)
7	0 (0)	14	9.37(9.37)

IC1207

1	1.48(1.46)
2	1.4(1.39)
3	2.54(2.54)
4	0(0)
5	0(0)
6	9.27(9.27)
7	0(0)
8	1.13(1.11)
9	1.48(1.46)

Q1201

B	0.64(0.63)
C	0.08(0.8)
E	0(0)

Q1202

B	0 (0)
C	1.13(1.11)
E	0 (0)

Q1203

B	0 (0)
C	0(1.46)
E	0(0)

Q1204

B	0(0)
C	1.69(1.69)
E	0 (0)

Q1205

B	5.97(5.98)
C	0(0)
E	1.69(1.68)

Q1206

B	0.79(0.79)
C	0
E	0(0)

Q1207

B	0 (0)
C	9.34(9.34)
E	0(0)

Q1208

B	9.34(9.34)
C	1.69 (0)
E	9.43(9.43)

Q1209

B	2.96(2.96)
C	7.05(7.05)
E	2.32(2.32)

Q1210

B	5.79(5.79)
C	9.43(9.43)
E	5.09(5.09)

Q1211

B	8.07(8.06)
C	9.4 (9.4)
E	7.41(7.41)

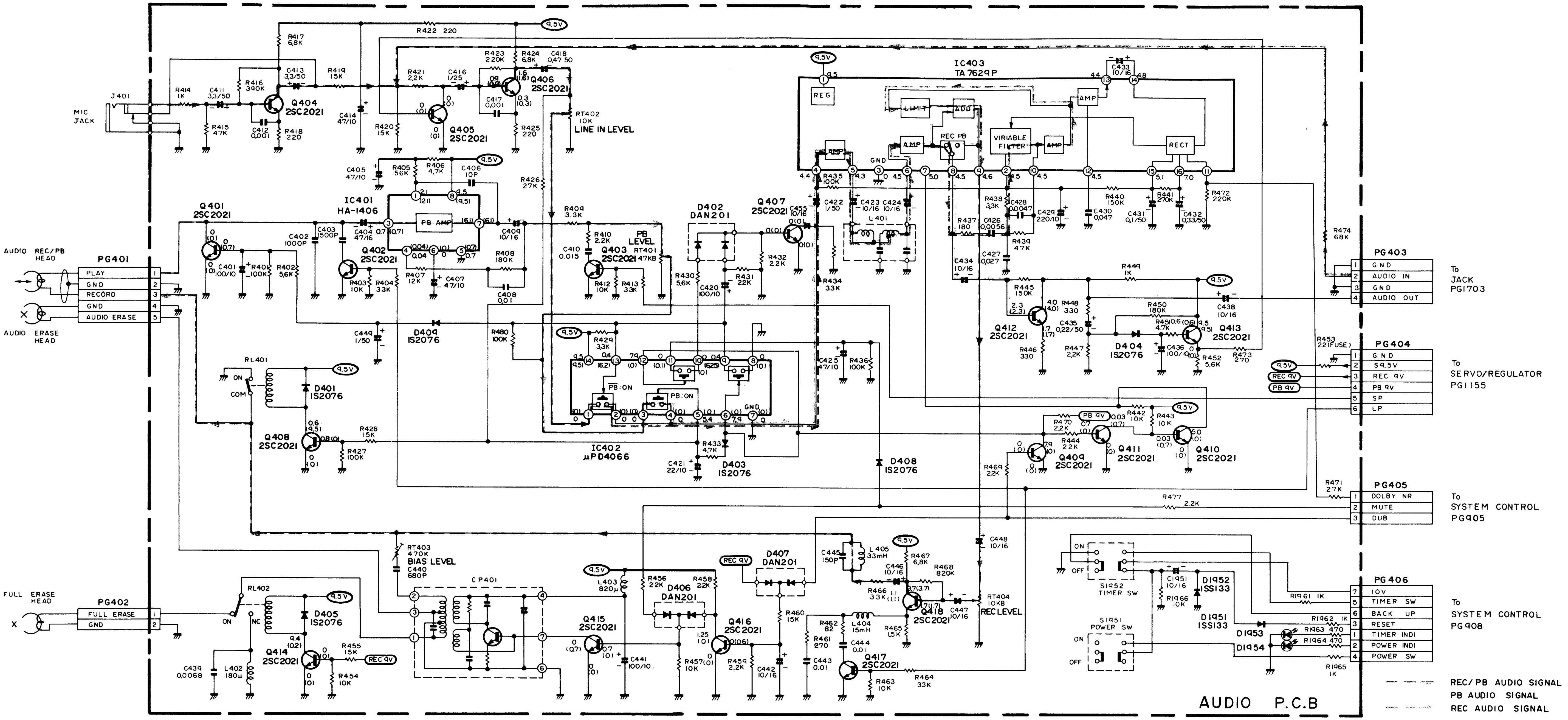
Q1212

B	2.54 (2.54)
C	8.07(8.06)
E	1.95(5.84)

Q1214

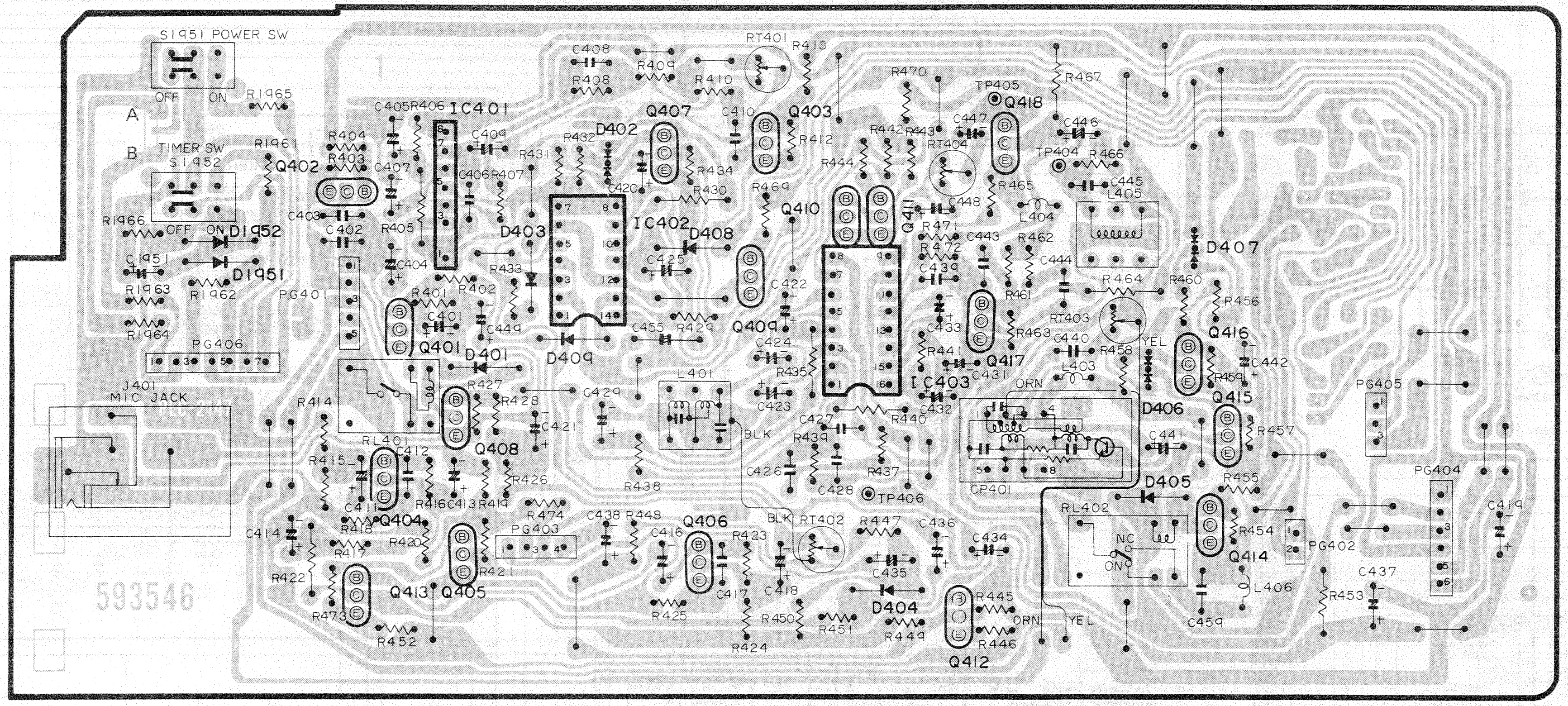
B	2.49(2.49)
C	1.71(1.71)
E	1.71(1.71)

AUDIO



MIC JACK
J401
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
PG401
PLAY
GND
RECORD
GND
AUDIO ERASE
PG402
FULL ERASE
GND
Q401 2SC2021
Q402 2SC2021
Q403 2SC2021
Q404 2SC2021
Q405 2SC2021
Q406 2SC2021
Q407 2SC2021
Q408 2SC2021
Q409 2SC2021
Q410 2SC2021
Q411 2SC2021
Q412 2SC2021
Q413 2SC2021
Q414 2SC2021
Q415 2SC2021
Q416 2SC2021
Q417 2SC2021
Q418 2SC2021
IC401 HA-1406
PB AMP
IC402 μPD4066
PB:ON
IC403 TA7629P
REG
LIMIT
ADD
AMP
REC PB
VIRIABLE FILTER
RECT
D401 1S2076
D402 DAN201
D403 1S2076
D404 1S2076
D405 1S2076
D406 DAN201
D407 DAN201
D408 1S2076
D409 1S2076
RL401
RL402
ON
COM
NC
RT401 47KB PB LEVEL
RT402 10K LINE IN LEVEL
RT403 470K BIAS LEVEL
RT404 10KB REC LEVEL
CP401
L401
L402 180μ
L403 820μ
L404 15mH
L405 33mH
9.5V
REC 9V
PB 9V
PG403
GND
AUDIO IN
GND
AUDIO OUT
To JACK PG1703
PG404
GND
S9.5V
REC 9V
PB 9V
SP
LP
To SERVO/REGULATOR PG1155
PG405
DOLBY NR
MUTE
DUB
To SYSTEM CONTROL PG905
PG406
10V
TIMER SW
BACK UP
RESET
TIMER INDI
POWER INDI
POWER SW
To SYSTEM CONTROL PG908
S1952 TIMER SW
S1951 POWER SW
D1951 1SS133
D1952 1SS133
D1953
D1954
AUDIO P.C.B
REC/PB AUDIO SIGNAL
PB AUDIO SIGNAL
REC AUDIO SIGNAL

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND VOLTAGES IN ( ) ARE MEASURED IN RECORD MODE.

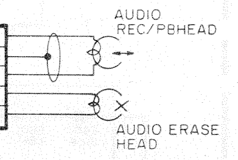

S1951 POWER SW
OFF
ON
A
B
TIMER SW
S1952
R1965
R1961
R1966
D1952
D1951
C1951
R1963
R1962
R1964
PG401
PG406
J401
MIC JACK
593546
C408
R408
R409
R410
RT401
R413
C405
R406
IC401
C409
R404
R403
Q402
C407
C406
R407
R431
R432
D402
Q407
C410
Q403
R412
C403
C402
R405
D403
C420
R434
R430
IC402
D408
R469
Q410
C404
R433
C425
C422
R401
R402
C401
C449
D401
D409
C455
R429
Q409
C424
R435
C423
Q401
R427
R428
C429
L401
C421
R414
RL401
R415
Q408
R426
R418
C411
C412
R416
C413
R414
Q404
R474
C414
R417
R420
PG403
C438
R448
Q406
C416
R423
BLK
RT402
R447
C436
C434
R422
R473
Q413
Q405
R421
R425
C417
C418
C435
D404
R450
R451
R449
R445
R446
Q412
ORN
YEL
R452
R424
R438
C426
C427
R439
C428
R437
TP406
R440
C432
IC403
R470
TP405
Q418
R467
C447
C446
R442
R443
RT404
R444
TP404
R466
C445
L405
C448
R465
L404
Q411
R471
R472
C443
R462
C444
C439
C433
R461
R464
R460
D407
R456
R463
RT403
C440
R458
YEL
Q416
R441
C431
Q417
L403
R459
C442
ORN
Q415
D406
CP401
C441
R457
D405
R455
RL402
NC
ON
R454
PG402
Q414
PG405
PG404
C419
C437
R453
L406
C459

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND VOLTAGES IN ( ) ARE MEASURED IN RECORD MODE

AUDIO P.C.B

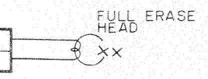
PG401

1	PLAY
2	GND
3	RECORD
4	GND
5	AUDIO ERASE


AUDIO
REC/PBHEAD
AUDIO ERASE
HEAD

PG402

1	FULL ERASE
2	GND


FULL ERASE
HEAD

PG403

1	GND
2	AUDIO IN
3	GND
4	AUDIO OUT

To
JACK
PG1703

PG404

1	GND
2	S9.5V
3	REC 9V
4	PB 9V
5	SP
6	LP

To
SERUO/REGULATOR
PG1155

PG405

1	DOLBY NR
2	MUTE
3	DUB

To
SYSTEM CONTROL
PG905

PG406

1	TIMER INDI
2	POWER INDI
3	RESET
4	POWER SW
5	TIMER SW
6	BACK UP
7	10V

To
SYSTEM CONTROL
PG908

Q412

B	2.3 (2.3)
C	4.0 (4.0)
E	1.7 (1.7)

Q413

B	0.6 (0.6)
C	9.5 (9.5)
E	0 (0)

Q414

B	0 (0)
C	9.4 (0.2)
E	0 (0)

Q415

B	0.7 (0)
C	0 (0.7)
E	0 (0)

Q416

B	0 (0.6)
C	1.25 (0)
E	0 (0)

Q418

B	1.7 (1.7)
C	3.7 (3.7)
E	1.1 (1.1)

Q411

B	0.7 (0)
C	0.03 (0.7)
E	0 (0)

IC401

8	9.5 (9.5)
7	6.1 (6.1)
6	0.7 (0.7)
5	0 (0)
4	0.04 (0.04)
3	0.7 (0.7)
1	2.1 (2.1)

IC402

7	0 (0)	8	0 (0)
6	7.9 (0)	9	0.4 (6.25)
5	5.4 (0)	10	0 (0)
4	0 (0)	11	0 (0.1)
3	0 (0)	12	7.9 (0)
2	0 (0)	13	0.4 (6.2)
1	0 (0)	14	9.5 (9.5)

IC403

8	4.5	9	4.6
7	5.0	10	4.5
6	4.5	11	—
5	4.3	12	4.5
4	4.4	13	4.4
3	0	14	4.8
2	4.5	15	5.1
1	9.5	16	7.0

Q401

B	0 (0.7)
C	0 (0)
E	0 (0)

Q405

B	0 (0)
C	0 (0)
E	0 (0)

Q406

B	0.9 (0.9)
C	1.6 (1.6)
E	0.3 (0.3)

Q407

B	0 (0)
C	0 (0)
E	0 (0)

Q408

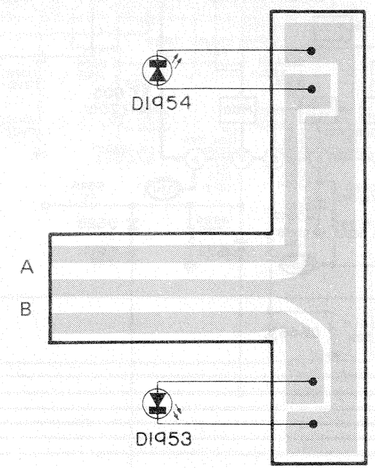
B	0.8 (0)
C	0.6 (9.5)
E	0 (0)

Q409

B	0 (0)
C	7.9 (0)
E	0 (0)

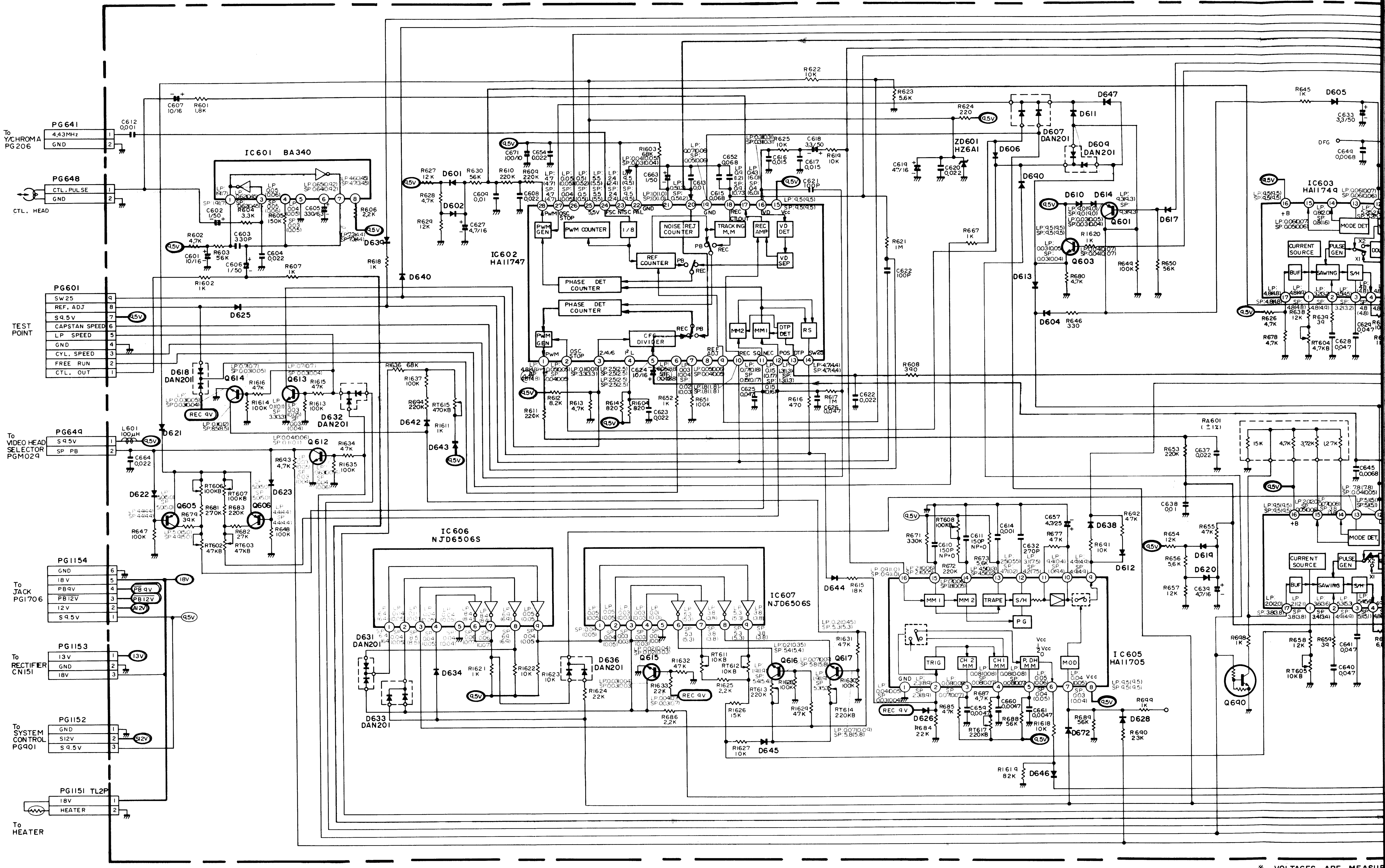
Q410

B	0.03 (0.7)
C	5.0 (0)
E	0 (0)

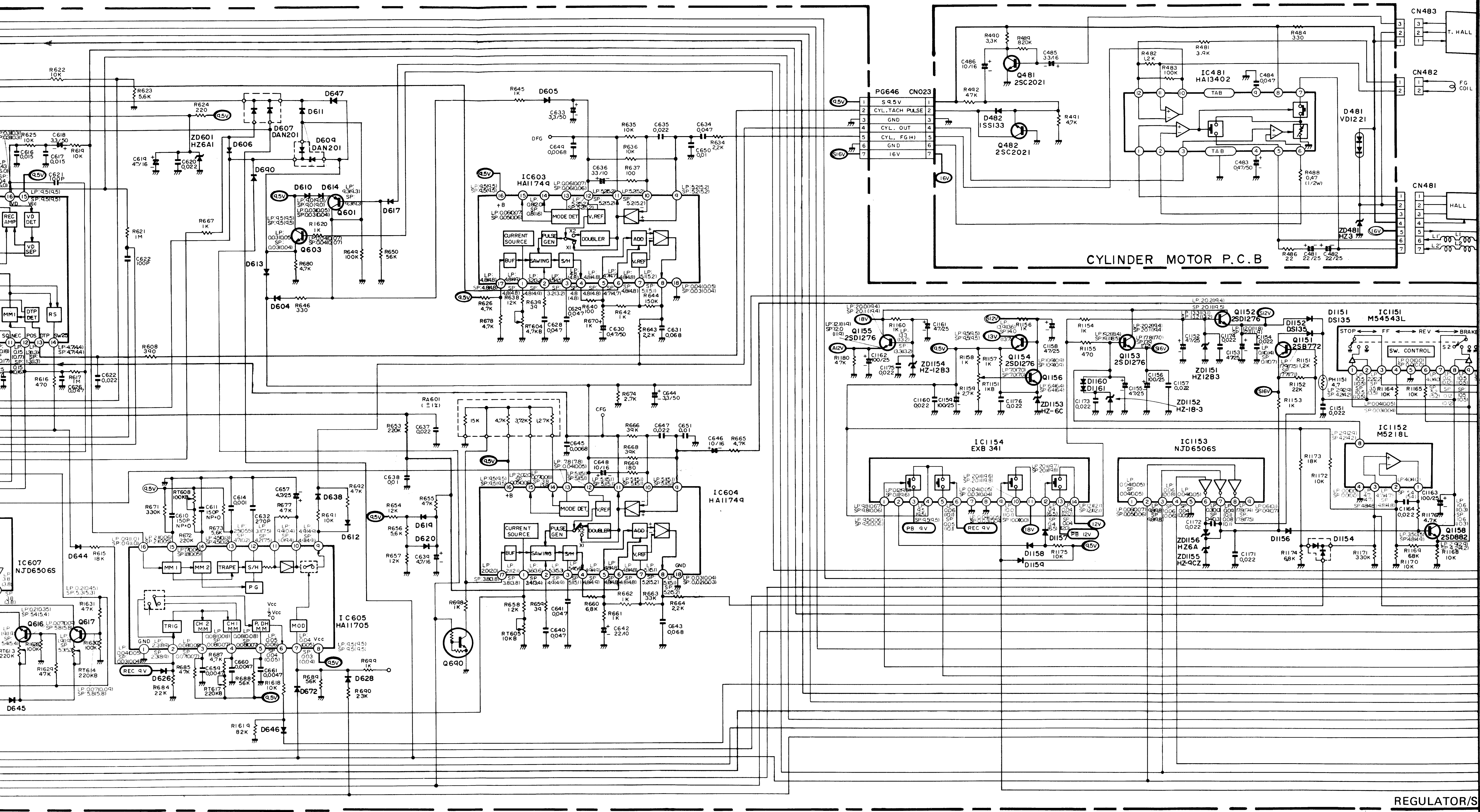

D1954
A
B
D1953

LED P.C.B.

REGULATOR/SERVO


To Y/CHROMA PG206
PG641
4.43MHz
GND
PG648
CTL. PULSE
GND
CTL. HEAD
PG601
SW25
REF. ADJ
S9.5V
CAPSTAN SPEED
LP SPEED
GND
CYL. SPEED
FREE RUN
CTL. OUT
TEST POINT
To VIDEO HEAD SELECTOR PGM029
PG649
S9.5V
SP PB
PG1154
GND
18V
PB9V
PB12V
12V
S9.5V
To JACK PG1706
PG1153
13V
GND
18V
To RECTIFIER CN151
PG1152
GND
S12V
S9.5V
To SYSTEM CONTROL PG901
PG1151 TL2P
18V
HEATER
To HEATER
IC601 BA340
IC602 HA11747
PWM GEN
PWM COUNTER
1/8
NOISE REJ COUNTER
TRACKING M.M
REC AMP
VD DET
REF COUNTER
VD SEP
PHASE DET COUNTER
CFG DIVIDER
MM2
MM1
DTP DET
RS
IC606 NJD6506S
IC607 NJD6506S
IC605 HA11705
MM1
MM2
TRAPE
S/H
PG
TRIG
CH2 MM
CH1 MM
P. DH MM
MOD
IC603 HA11749
MODE DET
CURRENT SOURCE
PULSE GEN
BUF
SAWING
S/H
Q601
Q603
Q605
Q606
Q612
Q613
Q614
Q615
Q616
Q617
Q690
D601
D602
D604
D605
D606
D607 DAN201
D609 DAN201
D610
D611
D612
D613
D614
D617
D618 DAN201
D619
D620
D621
D622
D623
D625
D626
D628
D631 DAN201
D632 DAN201
D633 DAN201
D634
D636 DAN201
D638
D639
D640
D642
D643
D644
D645
D646
D647
D672
D690
ZD601 HZ6A1
L601 100μH
RA601 (±1%)
9.5V
REC 9V
18V
13V
12V
S12V
DFG

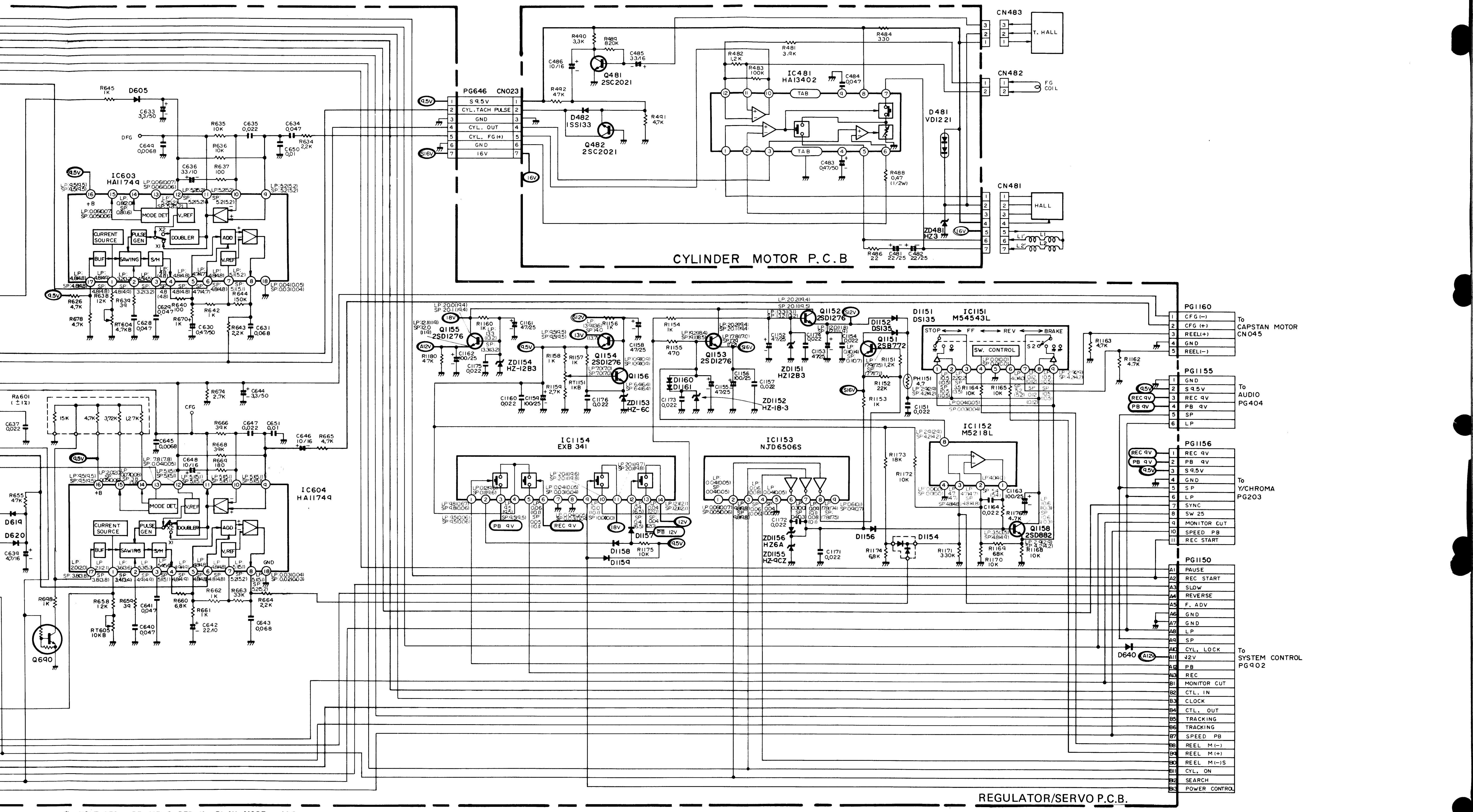
※ VOLTAGES ARE MEASUR
VOLTAGES IN ( ) ARE


CN483
T. HALL
CN482
FG COIL
CN481
HALL
PG646
CN023
S9.5V
CYL.TACH PULSE
GND
CYL. OUT
CYL. FG(+)
GND
16V
IC481
HA13402
Q481
2SC2021
Q482
2SC2021
D482
1SS133
D481
VD1221
ZD481
HZ3
CYLINDER MOTOR P.C.B
IC603
HA11749
IC604
HA11749
IC605
HA11705
IC607
NJD6506S
MODE DET
V.REF
CURRENT SOURCE
PULSE GEN
DOUBLER
SAWING
S/H
BUF
ADD
MM1
MM2
TRAPE
PG
TRIG
CH 2 MM
CH1 MM
P. DH MM
MOD
REC AMP
VD DET
VD SEP
DTP DET
RS
Q601
Q603
Q616
Q617
Q690
D607
DAN201
D609
DAN201
ZD601
HZ6A1
IC1151
M54543L
STOP
FF
REV
BRAKE
SW. CONTROL
IC1152
M5218L
IC1153
NJD6506S
IC1154
EXB 341
Q1152
2SD1276
Q1151
2SB772
Q1153
2SD1276
Q1154
2SD1276
Q1155
2SD1276
Q1156
Q1158
2SD882
ZD1151
HZ12B3
ZD1152
HZ-18-3
ZD1153
HZ-6C
ZD1154
HZ-12B3
ZD1155
HZ-9CZ
ZD1156
HZ6A
D1151
DS135
D1152
DS135
PB 9V
REC 9V
PB 12V
REGULATOR/S

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.

REC / PB CYLINDER MOTOR SIGNAL
REC CYLINDER MOTOR SIGNAL
PB CYLINDER MOTOR SIGNAL
WAVEFORMS

REC / PB CAPSTAN MOTOR SIGNAL
REC CAPSTAN MOTOR SIGNAL
PB CAPSTAN MOTOR SIGNAL
WAVEFORMS


CYLINDER MOTOR P.C.B
REGULATOR/SERVO P.C.B.
CN483
T. HALL
CN482
FG COIL
CN481
HALL
IC481 HA13402
Q481 2SC2021
Q482 2SC2021
D482 1SS133
D481 VD1221
ZD481 HZ3
PG646 CN023
S9.5V
CYL. TACH PULSE
GND
CYL. OUT
CYL. FG(+)
GND
16V
IC603 HA11749
IC604 HA11749
MODE DET.
V.REF
CURRENT SOURCE
PULSE GEN
DOUBLER
ADD
BUF
SAWING
S/H
DFG
CFG
D605
Q690
IC1154 EXB 341
IC1153 NJD6506S
IC1151 M54543L
IC1152 M5218L
STOP
FF
REV
BRAKE
SW. CONTROL
Q1155 2SD1276
Q1154 2SD1276
Q1153 2SD1276
Q1152 2SD1276
Q1151 2SB772
Q1156
Q1158 2SD882
ZD1154 HZ-12B3
ZD1153 HZ-6C
ZD1151 HZ12B3
ZD1152 HZ-18-3
ZD1156 HZ6A
ZD1155 HZ-9CZ
D1151 DS135
D1152 DS135
D1160
D1161
D1156
D1154
D1157
D1158
D1159
D640
PG1160
CFG (−)
CFG (+)
REEL(+)
GND
REEL(−)
To CAPSTAN MOTOR CN045
PG1155
GND
S9.5V
REC 9V
PB 9V
SP
LP
To AUDIO PG404
PG1156
REC 9V
PB 9V
S9.5V
GND
SP
LP
SYNC
SW 25
MONITOR CUT
SPEED PB
REC START
To Y/CHROMA PG203
PG1150
PAUSE
REC START
SLOW
REVERSE
F. ADV
GND
GND
LP
SP
CYL. LOCK
12V
PB
REC
MONITOR CUT
CTL. IN
CLOCK
CTL. OUT
TRACKING
TRACKING
SPEED PB
REEL M(−)
REEL M(+)
REEL M(−)S
CYL. ON
SEARCH
POWER CONTROL
To SYSTEM CONTROL PG902

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.

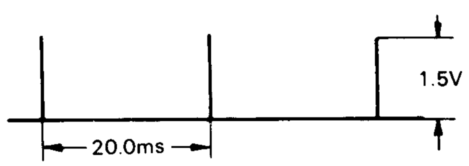
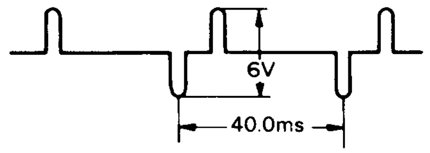
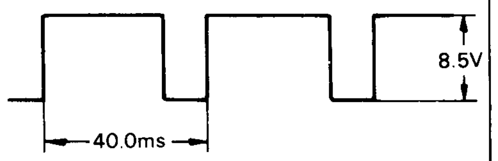
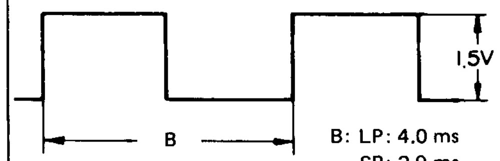
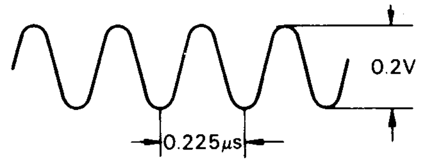
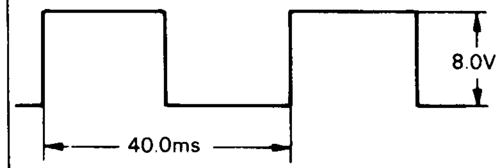
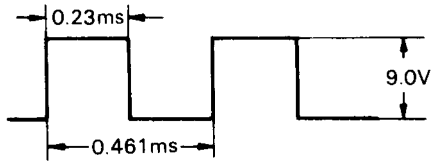
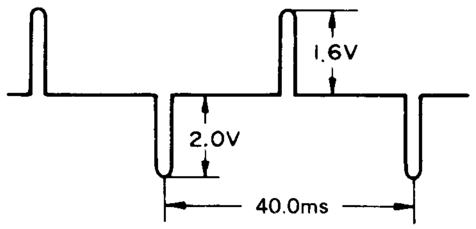
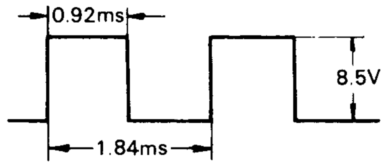
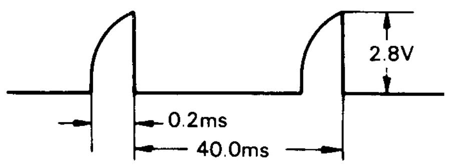
REC / PB CYLINDER MOTOR SIGNAL
REC CYLINDER MOTOR SIGNAL
PB CYLINDER MOTOR SIGNAL
WAVEFORMS

REC / PB CAPSTAN MOTOR SIGNAL
REC CAPSTAN MOTOR SIGNAL
PB CAPSTAN MOTOR SIGNAL
WAVEFORMS

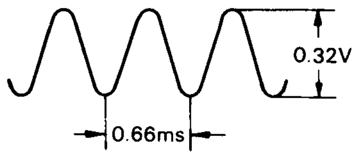
SERVO WAVEFORM DIAGRAM

The diagram below shows the waveforms obtained when the color bar signal (1.0Vp-p) is input to the video input jack and measured in the LP mode.

Note: (REC) shows the waveform obtained only during recording, and (PLAY), the waveform obtained only during play.

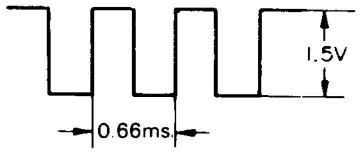
40	 IC602-⑯ (REC)	**45**	 IC601-⑦ (REC)
41	 IC602-⑰ (REC)	**46**	 B: LP: 4.0 ms SP: 2.0 ms IC602-⑤ (REC)
42	 IC602-㉔ (REC/PLAY)	**47**	 IC602-⑭ (REC/PLAY)
43	 0.23ms 9.0V 0.461ms IC602-㉘ (REC/PLAY)	**48**	 1.6V 2.0V 40.0ms IC602-⑬ (REC/PLAY)
44	 0.92ms 8.5V 1.84ms IC602-① (REC/PLAY)	**49**	 2.8V 0.2ms 40.0ms IC602-⑪ IC602-⑫ (REC/PLAY)

50



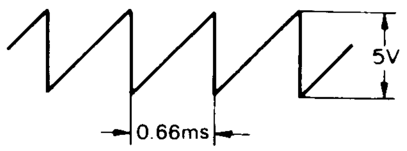
IC603-⑨ (REC/PLAY)

51



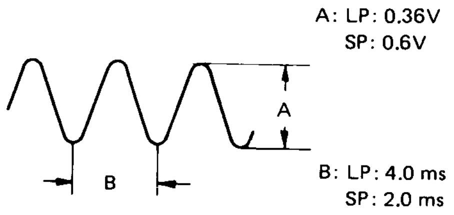
IC603-⑪ (REC/PLAY)

52



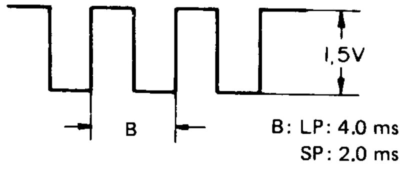
IC603-② (REC/PLAY)

53


A: LP: 0.36V
SP: 0.6V
A
B
B: LP: 4.0 ms
SP: 2.0 ms

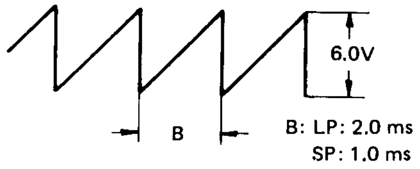
IC604-⑨ (REC/PLAY)

54


1.5V
B
B: LP: 4.0 ms
SP: 2.0 ms

IC604-⑪ (REC/PLAY)

55

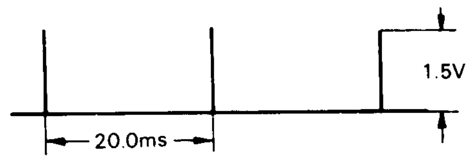
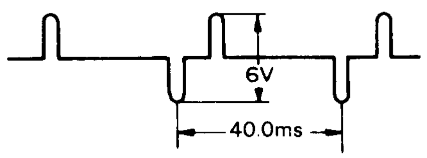
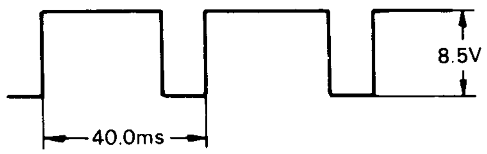
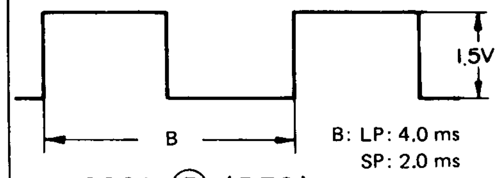
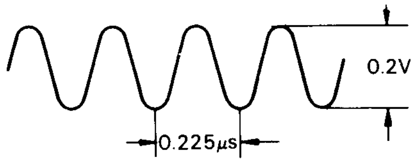
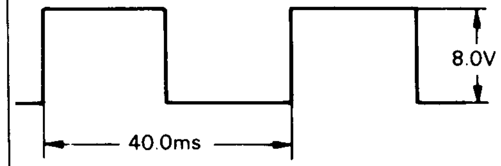
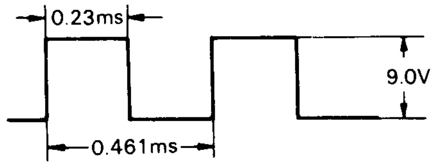
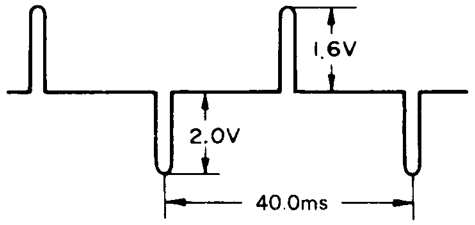
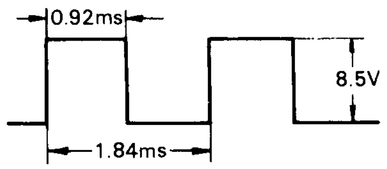
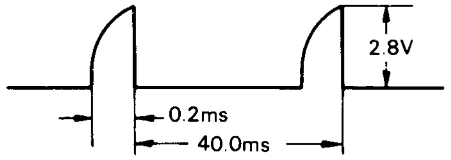

6.0V
B
B: LP: 2.0 ms
SP: 1.0 ms

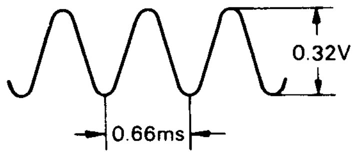
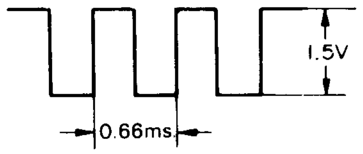
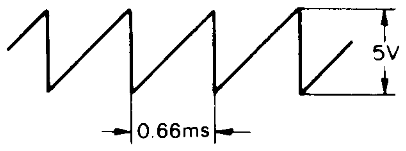
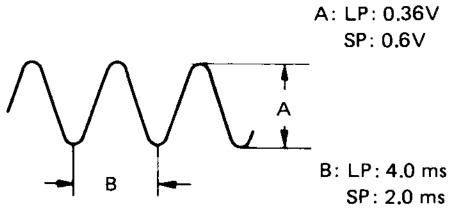
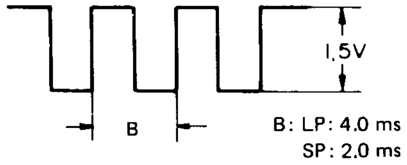
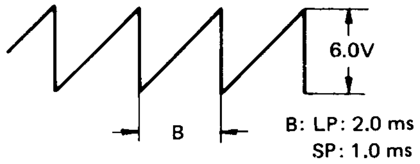
IC604-② (REC/PLAY)

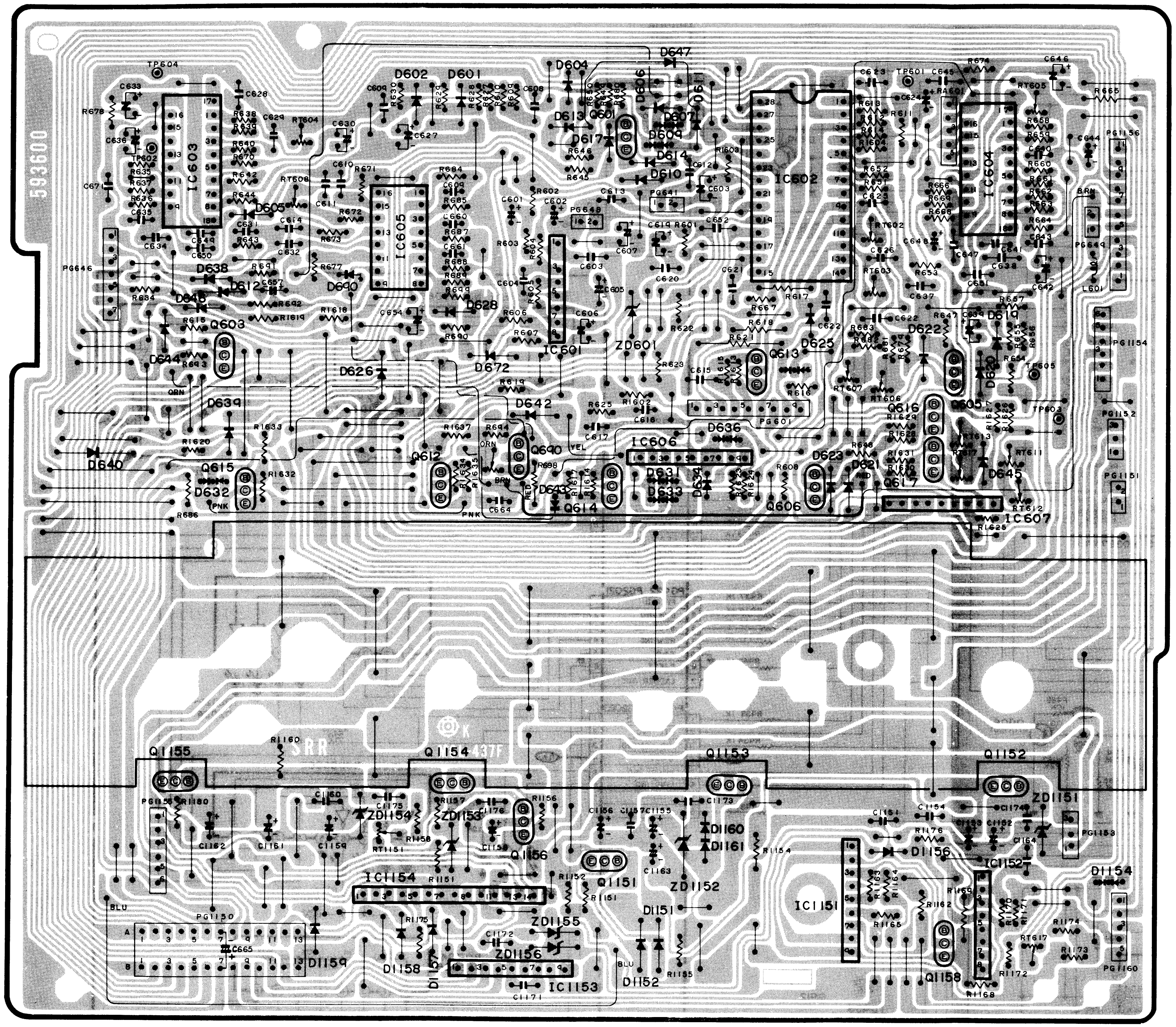
SERVO WAVEFORM DIAGRAM

The diagram below shows the waveforms obtained when the color bar signal (1.0Vp-p) is input to the video input jack and measured in the LP mode.

Note: (REC) shows the waveform obtained only during recording, and (PLAY), the waveform obtained only during play.

40	 IC602-⑯ (REC)	45	 IC601-⑦ (REC)
41	 IC602-⑰ (REC)	46	 1.5V B B: LP: 4.0 ms SP: 2.0 ms IC602-⑤ (REC)
42	 IC602-㉔ (REC/PLAY)	47	 IC602-⑭ (REC/PLAY)
43	 0.23ms 9.0V 0.461ms IC602-㉘ (REC/PLAY)	48	 1.6V 2.0V 40.0ms IC602-⑬ (REC/PLAY)
44	 0.92ms 8.5V 1.84ms IC602-① (REC/PLAY)	49	 2.8V 0.2ms 40.0ms IC602-⑪ IC602-⑫ (REC/PLAY)

50	 IC603-⑨ (REC/PLAY)
51	 IC603-⑪ (REC/PLAY)
52	 IC603-② (REC/PLAY)
53	 IC604-⑨ (REC/PLAY)
54	 IC604-⑪ (REC/PLAY)
55	 IC604-② (REC/PLAY)


593600
TP604
IC603
IC605
IC602
IC604
IC601
IC606
IC607
D602
D601
D604
D647
Q603
Q615
Q612
Q690
Q614
Q613
Q616
Q617
Q606
ZD601
IC1151
IC1152
IC1153
IC1154
Q1155
Q1154
Q1153
Q1152
Q1151
Q1156
Q1158
ZD1151
ZD1154
ZD1153
ZD1155
ZD1156
ZD1152
PG1150
PG601
PG1151
PG1152
PG1153
PG1154
PG1156
PG1160
PG646
PG641
BLU
ORN
PNK
YEL
BRN

REGULATOR/SERVO P.C.B.

IC601

	SP	LP
1	1.9 (1.7)	1.9 (1.7)
2		
3	0.62 (0.45)	0.62 (0.45)
4	0.05 (0.06)	0.05 (0.06)
5	0.03 (0.05)	0.04 (0.05)
6	0.64 (0.92)	0.65 (0.92)
7	4.7 (3.45)	4.6 (3.45)
8	7.3 (4.4)	7.3 (4.4)

IC 602

	SP	LP		SP	LP
28	4.7 (4.7)	4.7 (4.7)	1	4.8 (4.8)	4.8 (4.8)
27	0.04 (0.05)	0.05 (0.05)	2	0.04 (0.05)	0.05 (0.05)
26	0.5 (0.05)	0.51 (0.52)	3	3.3 (3.3)	0.1 (0.11)
25	5.5 (5.5)	5.5 (5.5)	4	2.5 (2.5)	2.5 (2.5)
24	2.4 (2.4)	2.4 (2.4)	5	2.5 (2.5)	2.5 (2.5)
23	9.5 (9.5)	9.5 (9.5)	6	0.04 (8.8)	0.05 (8.8)
22	0.03 (0.04)	0.04 (0.05)	7	0.02 (0.03)	0.03 (0.04)
21	1.0 (1.0)	1.0 (1.0)	8	0.04 (0.05)	0.05 (0.06)
20	0.5 (1.2)	0.5 (1.3)	9	1.8 (1.8)	1.8 (1.8)
19	0.05 (0.06)	0.06 (0.07)	10	1.4 (1.4)	1.4 (1.4)
18	0.9 (0.73)	0.9 (1.2)	11	0.15 (0.17)	0.17 (0.18)
17	0.4 (6.0)	0.43 (6.0)	12	0.15 (0.16)	0.15 (0.17)
16	0.31 (0.31)	0.31 (0.31)	13	1.3 (1.3)	1.3 (1.3)
15	9.5 (9.5)	9.5 (9.5)	14	4.7 (4.4)	4.7 (4.4)

IC 603

	SP	LP		SP	LP
			17	4.8 (4.8)	4.8 (4.8)
16	9.5 (9.5)	9.5 (9.5)	1	4.8 (4.9)	4.8 (4.9)
15	0.05 (0.06)	0.05 (0.06)	2	3.2 (3.2)	3.2 (3.2)
14	0.8 (1.6)	0.8 (2.0)	3	4.5 (4.5)	4.5 (4.5)
13	0.06 (0.06)	0.06 (0.07)	4	4.8 (4.8)	4.8 (4.8)
12	5.2 (5.2)	5.2 (5.2)	5	4.8 (4.8)	4.8 (4.8)
11	5.2 (5.2)	5.2 (5.2)	6	4.7 (4.7)	4.7 (4.7)
10	5.2 (5.2)	5.2 (5.2)	7	4.8 (4.8)	4.8 (4.8)
9	5.2 (5.2)	5.2 (5.2)	8	5.1 (5.1)	5.1 (5.2)

	S
16	9.5
15	0.05
14	3.8
13	0.04
12	5.1
11	5.1
10	5.1
9	5.1

	1
SP	9.8 (0.06
LP	9.8 (0.67

IC605

	LP	SP		LP	SP
1	0.04 (0.05)	0.03 (0.04)	9	4.9 (4.9)	4.9 (4.9)
2	2.3 (8.9)	2.3 (8.9)	10	9.4 (0.4)	1.0 (9.4)
3	0.08 (0.08)	0.07 (0.07)	11	3.1 (7.5)	4.2 (7.5)
4	0.08 (0.08)	0.08 (0.07)	12	2.5 (0.55)	4.7 (0.2)
5	0.08 (0.08)	0.08 (0.07)	13	4.5 (0.13)	4.5 (0.12)
6	0.05 (0.06)	0.04 (0.05)	14	1.7 (0.06)	1.8 (0.05)
7	0.04 (0.05)	0.03 (0.04)	15	2.1 (0.06)	2.1 (0.05)
8	9.5 (9.5)	9.5 (9.5)	16	0.9 (1.0)	0.9 (1.0)

IC1151

	LP	SP
1	2.9 (2.9)	4.2 (4.2)
2	10.5 (10.5)	10.5 (10.5)
3	2.2 (2.2)	3.5 (3.5)
4	0.04 (0.05)	0.03 (0.04)
5	0.0 (0.0)	0.0 (0.0)
6	4.0 (4.0)	5.2 (5.2)
7	0.12 (0.12)	0.12 (0.12)
8	10.5 (10.5)	10.5 (10.5)
9	2.9 (2.9)	4.2 (4.2)

IC 1152

	LP	SP
1	4.0 (4.0)	5.4 (5.4)
2	4.7 (4.7)	4.8 (4.8)
3	4.7 (4.7)	4.8 (4.8)
4	0.0 (0.0)	0.0 (0.0)
5	18.7 (18.7)	19.1 (18.7)
6	18.7 (18.7)	19.1 (18.7)
7	18.2 (18.2)	18.5 (18.2)
8	18.7 (18.7)	19.1 (18.7)

Q 601

	LP	SP
B	9.3 (9.3)	9.3 (9.3)
C	0.03 (0.05)	0.03 (0.04)
E	9.0 (9.0)	9.0 (9.0)

Q 605

	LP	SP
B	4.4 (4.4)	4.4 (4.4)
C	5.0 (5.0)	4.9 (5.0)
E	5.0 (5.0)	5.0 (5.0)

Q616

	LP	SP
B	0.07 (0.09)	5.8 (5.8)
C	1.9 (1.9)	5.4 (5.4)
E	0.2 (0.35)	5.4 (5.4)

Q617

	LP	SP
B	0.07 (0.09)	5.8 (5.8)
C	1.9 (1.9)	5.3 (5.3)
E	0.2 (0.45)	5.3 (5.3)

Q1151

	LP	SP
B	17.9 (17.5)	17.7 (17.1)
C	0.1 (0.14)	0.1 (0.7)
E	18.0 (17.5)	17.9 (17.2)

Q1152

	LP	SP
B	13.3 (13.1)	13.3 (13.2)
C	20.2 (19.4)	20.1 (19.5)
E	12.0 (11.8)	12.1 (11.9)

Q1153

	LP	SP
B	19.2 (18.4)	19.1 (18.5
C	20.2 (19.4)	20.1 (19.5
E	17.8 (17.0)	17.9 (17.2

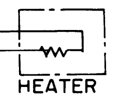
PG1150

	A		B
1	PAUSE	1	MONITOR COT
2	REC. START	2	CTL IN
3	SLOW	3	CLOCK
4	REVERSE	4	CTL OUT
5	F. ADV	5	TRACKING
6	GND	6	TRACKING
7	GND	7	SPEED PB
8	LP	8	REEL M(−)
9	SP	9	REEL M(+)
10	CYL. LOCK	10	REEL M(−)S
11	12V	11	CYL ON
12	PB	12	SEARCH
13	REC	13	POWER CONTROL

To
SYSTEM CONTROL
PG902

PG1151

1	18V
2	HEATER


HEATER

PG1152

1	GND
2	S12V
3	S9.5V

To
SYSTEM CONTROL
PG901

PG1153

1	13V
2	GND
3	18V

To
RECTIFIER
CN151

PG 11

1	S9.5V
2	12V
3	$\overline{\text{PB}}$12V
4	PB9V
5	18V
6	GND

To JACK
PG1706

PG601

1	CTL CUT
2	FREE RUN
3	CYLINDER SPEED
4	GND
5	LP SPEED
6	CAPSTAN SPEED
7	S9.5V
8	REF. ADJ
9	SW 25

TEST POINT

PG641

1	4.43MHz
2	GND

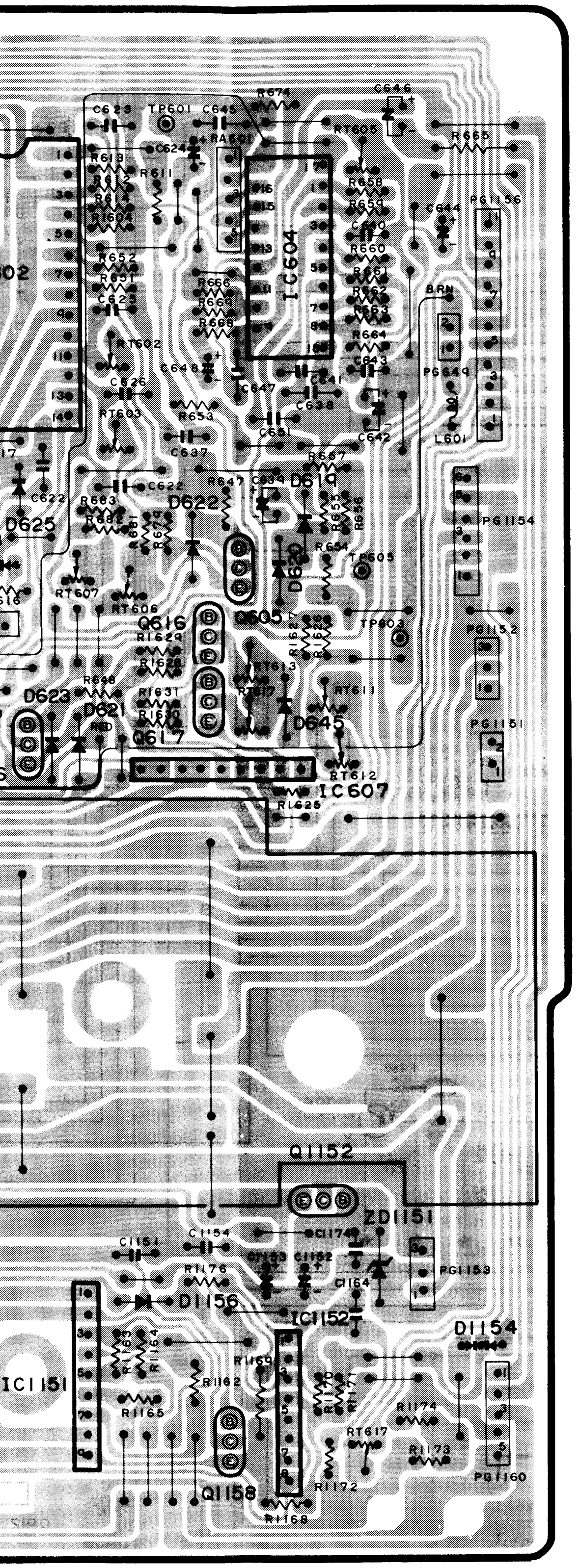
To Y/CHROMA
PG206

PG64

1	S9.5V
2	CYL.TACH
3	GND
4	CYL. CUT
5	CYL FG(+
6	GND
7	16V

To
CYLINDER
CN023

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.



REGULATOR/SERVO P.C.B.

IC 601

	SP	LP
1	1.9 (1.7)	1.9 (1.7)
2		
3	0.62(0.45)	0.62(0.45)
4	0.05(0.06)	0.05(0.06)
5	0.03(0.05)	0.04(0.05)
6	0.64(0.92)	0.65(0.92)
7	4.7 (3.45)	4.6 (3.45)
8	7.3 (4.4)	7.3 (4.4)

IC 602

	SP	LP		SP	LP
28	4.7 (4.7)	4.7 (4.7)	1	4.8 (4.8)	4.8 (4.8)
27	0.04 (0.05)	0.05(0.05)	2	0.04(0.05)	0.05(0.05)
26	0.5 (0.05)	0.51 (0.52)	3	3.3 (3.3)	0.1 (0.11)
25	5.5 (5.5)	5.5 (5.5)	4	2.5 (2.5)	2.5 (2.5)
24	2.4 (2.4)	2.4 (2.4)	5	2.5 (2.5)	2.5 (2.5)
23	9.5 (9.5)	9.5 (9.5)	6	0.04(8.8)	0.05 (8.8)
22	0.03 (0.04)	0.04(0.05)	7	0.02(0.03)	0.03(0.04)
21	1.0 (1.0)	1.0 (1.0)	8	0.04 (0.05)	0.05(0.06)
20	0.5 (1.2)	0.5 (1.3)	9	1.8 (1.8)	1.8 (1.8)
19	0.05 (0.06)	0.06(0.07)	10	1.4 (1.4)	1.4 (1.4)
18	0.9 (0.73)	0.9 (1.2)	11	0.15(0.17)	0.17 (0.18)
17	0.4 (6.0)	0.43(6.0)	12	0.15(0.16)	0.15 (0.17)
16	0.31 (0.31)	0.31 (0.31)	13	1.3 (1.3)	1.3 (1.3)
15	9.5 (9.5)	9.5 (9.5)	14	4.7 (4.4)	4.7 (4.4)

IC 603

	SP	LP		SP	LP
			17	4.8 (4.8)	4.8 (4.8)
16	9.5 (9.5)	9.5 (9.5)	1	4.8 (4.9)	4.8 (4.9)
15	0.05 (0.06)	0.05 (0.06)	2	3.2 (3.2)	3.2 (3.2)
14	0.8 (1.6)	0.8 (2.0)	3	4.5 (4.5)	4.5 (4.5)
13	0.06 (0.06)	0.06(0.07)	4	4.8 (4.8)	4.8 (4.8)
12	5.2 (5.2)	5.2 (5.2)	5	4.8 (4.8)	4.8 (4.8)
11	5.2 (5.2)	5.2 (5.2)	6	4.7 (4.7)	4.7 (4.7)
10	5.2 (5.2)	5.2 (5.2)	7	4.8 (4.8)	4.8 (4.8)
9	5.2 (5.2)	5.2 (5.2)	8	5.1 (5.1)	5.1 (5.2)

IC604

	SP	LP		SP	LP
			17	3.8 (3.8)	2.0 (2.0)
16	9.5 (9.5)	9.5 (9.5)	1	3.8 (3.8)	2.1 (2.1)
15	0.05(0.06)	2.0 (2.0)	2	3.4 (3.4)	3.6 (3.6)
14	3.8 (3.8)	0.07(0.08)	3	4.9 (4.9)	5.3 (5.3)
13	0.04(0.05)	7.8 (7.8)	4	5.1 5.1	5.4 (5.4)
12	5.1 (5.1)	5.1 (5.1)	5	4.8 (4.9)	4.9 (4.9)
11	5.1 (5.1)	5.1 (5.1)	6	4.8 (4.8)	4.8 (4.8)
10	5.1 (5.1)	5.1 (5.1)	7	4.8 (4.8)	4.8 (4.8)
9	5.1 (5.1)	5.1 (5.1)	8	5.2 (5.2)	5.1 (5.1)

IC606

	1	2	3	4	5	6	7	8	9
SP	6.4 (6.4)	0.04.(0.05)	8.5 (8.5)	0.04(0.04)	0.04(0.04)	0.06(0.07)	0.06(0.07)	6.9 (6.9)	0.04.(0.05)
LP	6.4 (6.4)	0.04(0.05)	0.11 (0.12)	0.04 (0.05)	0.04(0.05)	8.4 (8.4)	8.4 (8.4)	6.9 (6.9)	0.05(0.05)

IC1153

	1	2	3	4	5	6	7	8	9
SP	0.04(0.05)	0.05 (0.06)	9.8 (9.8)	0.06(0.06)	0.03(0.04)	0.4 (0.3)	0.08(0.1)	17.5 (17.5)	0.9 (0.7)
LP	0.04(0.05)	0.06(0.07)	9.8 (9.8)	0.06(0.08)	0.04(0.05)	0.3 (0.0)	0.09 (0.1)	17.8 (17.4)	0.6 (0.1)

IC1154

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SP	9.8 (0.06)	0.11 (9.6)	9.5 (0.06)	9.5 (9.5)	0.05(10.1)	0.04 (9.5)	0.03(0.04)	0.03(0.04)	10.0 (10.0)	20.1 (19.8)	20.1 (19.8)	0.4 (6.5)	0.04 (12.0)	12.1 (12.1)
LP	9.8 (0.67)	0.12 (9.6)	9.5(0.06)	9.5 (9.5)	0.06 (10.1)	0.05 (9.5)	0.04(0.05)	0.04(0.05)	10.0 (10.1)	20.1(19.6)	20.1(19.7)	0.4 (6.5)	0.04 (12.0)	12.1(12.1)

IC605

	LP	SP		LP	SP
1	0.04(0.05)	0.03(0.04)	9	4.9 (4.9)	4.9 (4.9)
2	2.3(8.9)	2.3 (8.9)	10	9.4 (0.4)	1.0 (9.4)
3	0.08(0.08)	0.07(0.07)	11	3.1 (7.5)	4.2 (7.5)
4	0.08(0.08)	0.08 (0.07)	12	2.5 (0.55)	4.7 (0.2)
5	0.08 (0.08)	0.08(0.07)	13	4.5 (0.13)	4.5(0.12)
6	0.05(0.06)	0.04(0.05)	14	1.7 (0.06)	1.8 (0.05)
7	0.04(0.05)	0.03(0.04)	15	2.1(0.06)	2.1(0.05)
8	9.5 (9.5)	9.5 (9.5)	16	0.9(1.0)	0.9 (1.0)

IC1151

	LP	SP
1	2.9(2.9)	4.2 (4.2)
2	10.5(10.5)	10.5(10.5)
3	2.2 (2.2)	3.5 (3.5)
4	0.04(0.05)	0.03(0.04)
5	0.0 (0.0)	0.0 (0.0)
6	4.0 (4.0)	5.2 (5.2)
7	0.12 (0.12)	0.12 (0.12)
8	10.5 (10.5)	10.5(10.5)
9	2.9 (2.9)	4.2 (4.2)

IC 1152

	LP	SP
1	4.0 (4.0)	5.4 (5.4)
2	4.7 (4.7)	4.8 (4.8)
3	4.7 (4.7)	4.8 (4.8)
4	0.0 (0.0)	0.0 (0.0)
5	18.7(18.7)	19.1(18.7)
6	18.7(18.7)	19.1(18.7)
7	18.2(18.2)	18.5(18.2)
8	18.7(18.7)	19.1 (18.7)

Q 601

	LP	SP
B	9.3(9.3)	9.3(9.3)
C	0.03(0.05)	0.03(0.04)
E	9.0 (9.0)	9.0(9.0)

Q 603

	LP	SP
B	0.04(0.07)	0.04(0.07)
C	9.5 (9.5)	9.5(9.5)
E	0.03(0.05)	0.03(0.04)

IC607

	1	2	3	4	5	6	7	8	9
SP	0.04 (0.05)	0.04 (0.05)	0.03(0.03)	0.03(0.03)	0.01 (0.01)	5.3 (5.3)	3.8 (3.8)	5.3 (5.3)	3.8 (3.8)
LP	0.05 (0.05)	0.05 (0.05)	0.03(0.03)	0.03(0.03)	0.01(0.01)	5.3 (5.3)	3.8 (3.8)	5.3 (5.3)	3.8(3.8)

Q 605

	LP	SP
B	4.4 (4.4)	4.4 (4.4)
C	5.0 (5.0)	4.9 (5.0)
E	5.0 (5.0)	5.0(5.0)

Q 606

	LP	SP
B	4.4 (4.4)	4.4 (4.4)
C	5.0 (5.0)	4.9 (5.0)
E	5.0 (5.0)	5.0 (5.0)

Q 612

	LP	SP
B	0.63(0.7)	0.04(0.06)
C	0.04(0.06)	0.1 (0.1)
E	0.03(0.05)	0.03(0.04)

Q 613

	LP	SP
B	0.7 (0.7)	0.03(0.04)
C	0.1 (0.1)	3.3 (3.3)
E	0.03(0.05)	0.03 (0.04)

Q 614

	LP	SP
B	0.7 (0.7)	0.03(0.05)
C	0.1 (0.12)	8.5 (8.5)
E	0.03(0.05)	0.03(0.04)

Q 615

	LP	SP
B	0.04 (0.7)	0.03(0.7)
C	0.03(0.04)	0.03(0.03)
E	0.02(0.04)	0.02(0.03)

Q 616

	LP	SP
B	0.07(0.09)	5.8 (5.8)
C	1.9 (1.9)	5.4 (5.4)
E	0.2(0.35)	5.4 (5.4)

Q 617

	LP	SP
B	0.07(0.09)	5.8 (5.8)
C	1.9 (1.9)	5.3 (5.3)
E	0.2(0.45)	5.3 (5.3)

Q 1151

	LP	SP
B	17.9(17.5)	17.7(17.1)
C	0.1(0.14)	0.1 (0.7)
E	18.0 (17.5)	17.9(17.2)

Q 1152

	LP	SP
B	13.3 (13.1)	13.3 (13.2)
C	20.2(19.4)	20.1(19.5)
E	12.0(11.8)	12.1(11.9)

Q 1153

	LP	SP
B	19.2(18.4)	19.1(18.5)
C	20.2(19.4)	20.1(19.5)
E	17.8 (17.0)	17.9 (17.2)

Q 1154

	LP	SP
B	10.9(10.9)	10.9(11.0)
C	13.9(13.6)	14.0(13.7)
E	9.5 (9.5)	9.5 (9.5)

Q 1155

	LP	SP
B	13.3(13.2)	13.3(13.2)
C	20.0(19.4)	20.1(19.4)
E	12.1(11.9)	12.0(11.9)

Q 1156

	LP	SP
B	7.0(7.0)	7.0(7.0)
C	10.9(10.9)	10.9(10.9)
E	6.4(6.4)	6.4 (6.4)

Q 1158

	LP	SP
B	3.5 (3.5)	4.8 (4.9)
C	10.6(10.3)	10.6(10.3)
E	2.9(2.9)	4.2 (4.2)

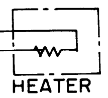
PG 1150

	A		B
1	PAUSE	1	MONITOR COT
2	REC. START	2	CTL IN
3	SLOW	3	CLOCK
4	REVERSE	4	CTL OUT
5	F. ADV	5	TRACKING
6	GND	6	TRACKING
7	GND	7	SPEED PB
8	LP	8	REEL M(−)
9	SP	9	REEL M(+)
10	CYL. LOCK	10	REEL M(−)S
11	12V	11	CYL ON
12	PB	12	SEARCH
13	REC	13	POWER CONTROL

To
SYSTEM CONTROL
PG902

PG1151

1	18V
2	HEATER


HEATER

PG 1152

1	GND
2	S12V
3	S9.5V

To
SYSTEM CONTROL
PG901

PG601

1	CTL CUT
2	FREE RUN
3	CYLINDER SPEED
4	GND
5	LP SPEED
6	CAPSTAN SPEED
7	S9.5V
8	REF. ADJ
9	SW 25

TEST POINT

PG 1153

1	13V
2	GND
3	18V

To
RECTIFIER
CN151

PG641

1	4.43MHz
2	GND

To Y/CHROMA
PG206

PG 1154

1	S9.5V
2	12V
3	$\overline{\text{PB12V}}$
4	PB9V
5	18V
6	GND

To JACK
PG1706

PG646

1	S9.5V
2	CYL.TACHPULSE
3	GND
4	CYL. CUT
5	CYL FG(+)
6	GND
7	16V

To
CYLINDER MOTOR
CN023

PG1155

1	GND
2	S9.5V
3	REC9V
4	PB9V
5	SP
6	LP

To AUDIO
PG404

PG648

1	CYL PULSE
2	GND

CTL HEAD

1	S9.5V
2	SP. PB

To
VIDEO HEAD SELECTOR
PGM029

PG1156

1	REC9V
2	PB9V
3	S9.5V
4	GND
5	SP
6	LP
7	SYNC
8	SW25
9	MONITOR CUT
10	SPEED PB
11	REC START

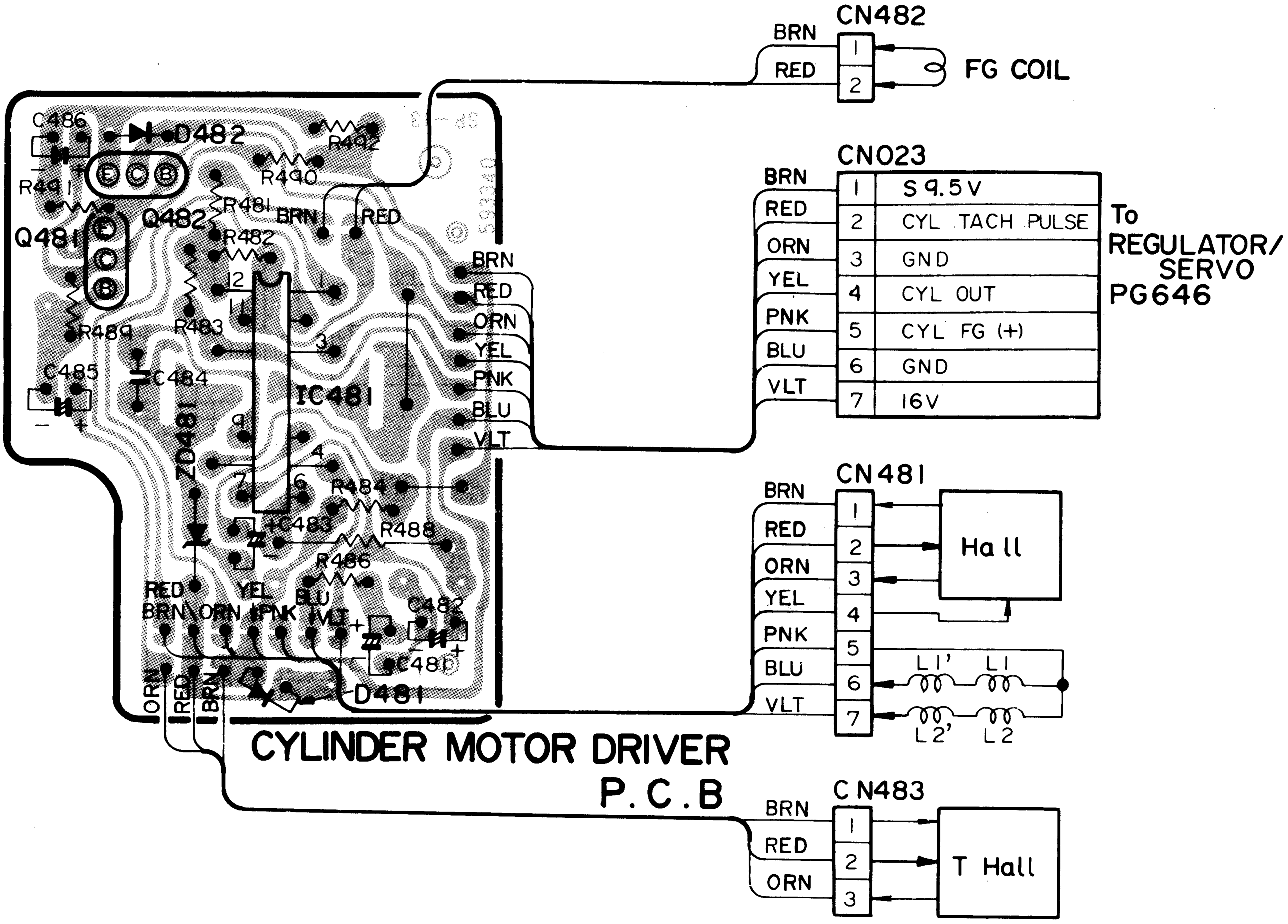
To Y/CHROMA
PG 203

PG1160

1	CFG(+)
2	CFG(−)
3	PEEL (+)
4	GND
5	REEL(−)

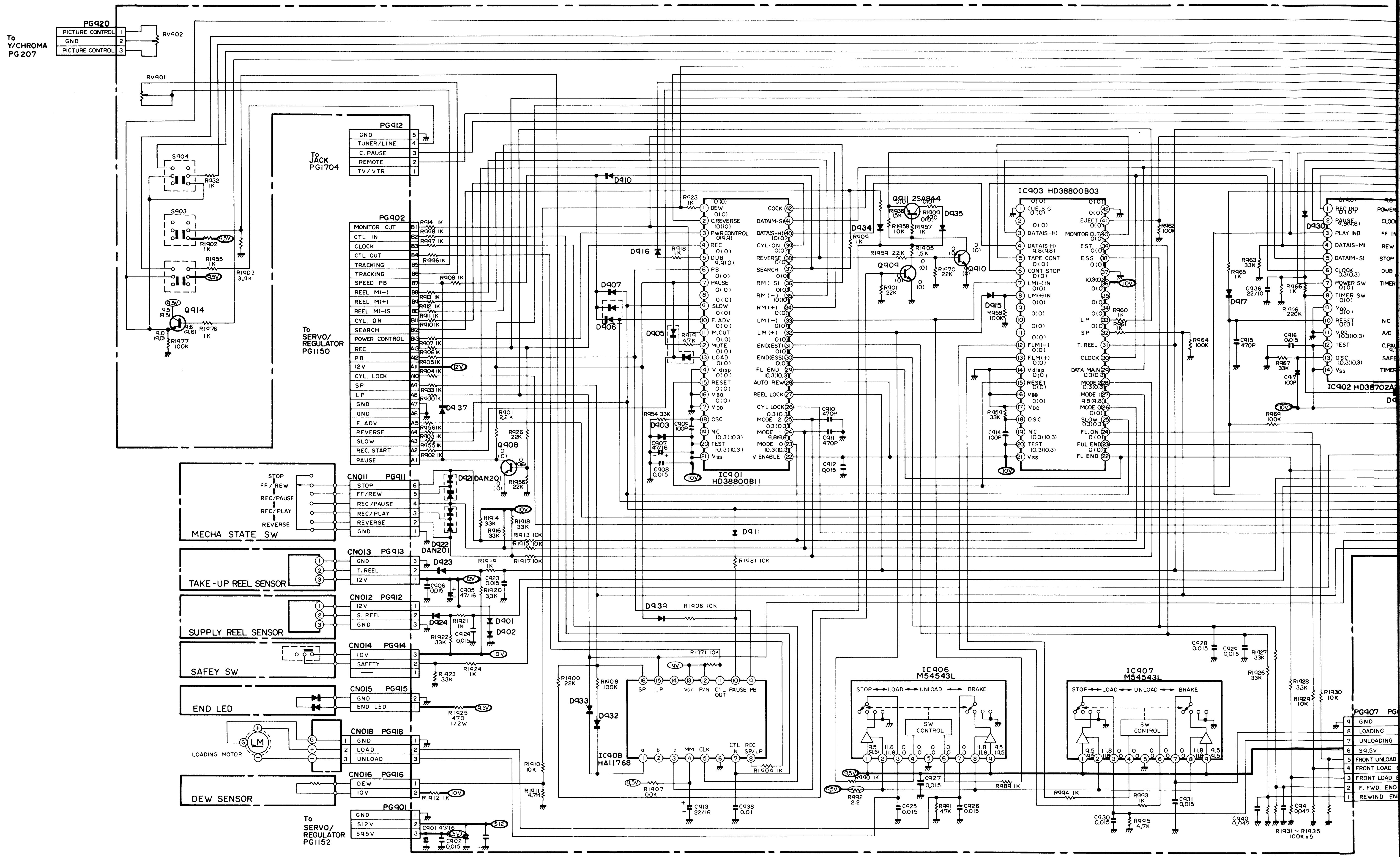
To
CAPSTAN MOTOR
CN045

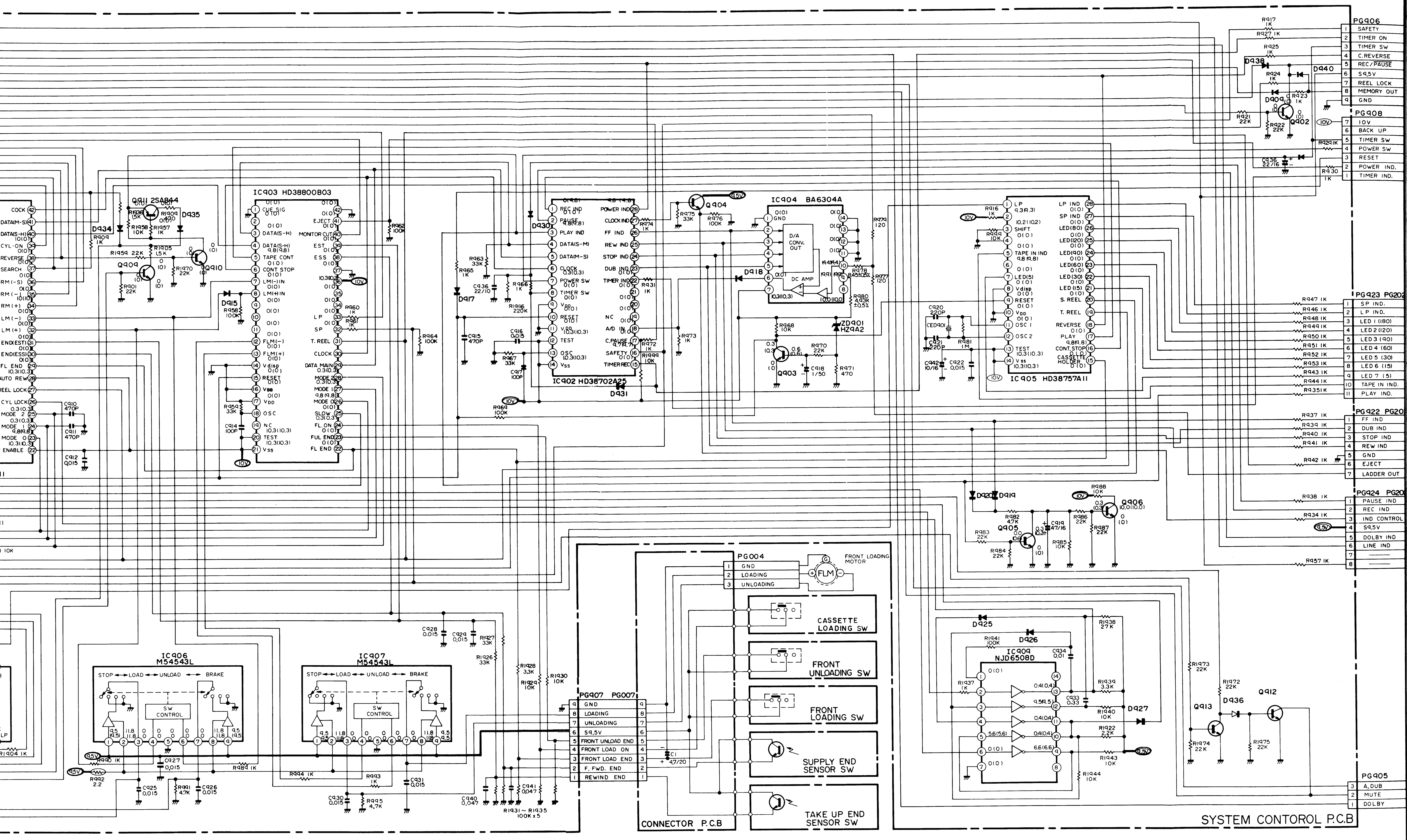
※ VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.


CN482
BRN
RED
1
2
FG COIL
CN023
BRN
RED
ORN
YEL
PNK
BLU
VLT
1 S9.5V
2 CYL TACH PULSE
3 GND
4 CYL OUT
5 CYL FG (+)
6 GND
7 16V
To REGULATOR/SERVO PG646
CN481
BRN
RED
ORN
YEL
PNK
BLU
VLT
1
2
3
4
5
6
7
Hall
L1'
L1
L2'
L2
CN483
BRN
RED
ORN
1
2
3
T Hall
C486
D482
R492
R491
E C B
R490
Q482
R481
BRN
RED
Q481
E
C
B
R482
12
1
11
3
R489
R483
C485
C484
IC481
ZD481
9
4
7
6
R484
C483
R488
R486
RED
BRN
ORN
YEL
PNK
BLU
VLT
C482
C481
D481
ORN
RED
BRN
BRN
RED
ORN
YEL
PNK
BLU
VLT

CYLINDER MOTOR DRIVER P.C.B

SYSTEM CONTROL/OPERATION SWITCH [For UK model]


To Y/CHROMA PG207
PG920
PICTURE CONTROL
GND
PICTURE CONTROL
RV902
RV901
S904
S903
Q914
To JACK PG1704
PG912
GND
TUNER/LINE
C. PAUSE
REMOTE
TV/VTR
PG902
MONITOR CUT
CTL IN
CLOCK
CTL OUT
TRACKING
TRACKING
SPEED PB
REEL M(−)
REEL M(+)
REEL M(−)S
CYL. ON
SEARCH
POWER CONTROL
REC
PB
12V
CYL. LOCK
SP
LP
GND
GND
F. ADV
REVERSE
SLOW
REC. START
PAUSE
To SERVO/ REGULATOR PG1150
D910
D916
D907
D906
D905
D903
Q908
IC901 HD38800B11
Q911 2SA844
D934
D935
Q909
Q910
D915
IC903 HD38800B03
D917
D930
IC902 HD38702A
MECHA STATE SW
STOP
FF/REW
REC/PAUSE
REC/PLAY
REVERSE
CN011 PG911
DAN201
D922
D911
TAKE-UP REEL SENSOR
CN013 PG913
T. REEL
D923
SUPPLY REEL SENSOR
CN012 PG912
S. REEL
D924
D901
D902
SAFEY SW
CN014 PG914
10V
SAFFTY
END LED
CN015 PG915
END LED
LOADING MOTOR
LM
CN018 PG918
LOAD
UNLOAD
DEW SENSOR
CN016 PG916
DEW
To SERVO/ REGULATOR PG1152
PG901
S12V
S9.5V
D939
D933
D932
IC908 HA11768
IC906 M54543L
IC907 M54543L
STOP ◄► LOAD ◄► UNLOAD ◄► BRAKE
SW CONTROL
PG907
LOADING
UNLOADING
S9.5V
FRONT UNLOAD
FRONT LOAD
F. FWD. END
REWIND END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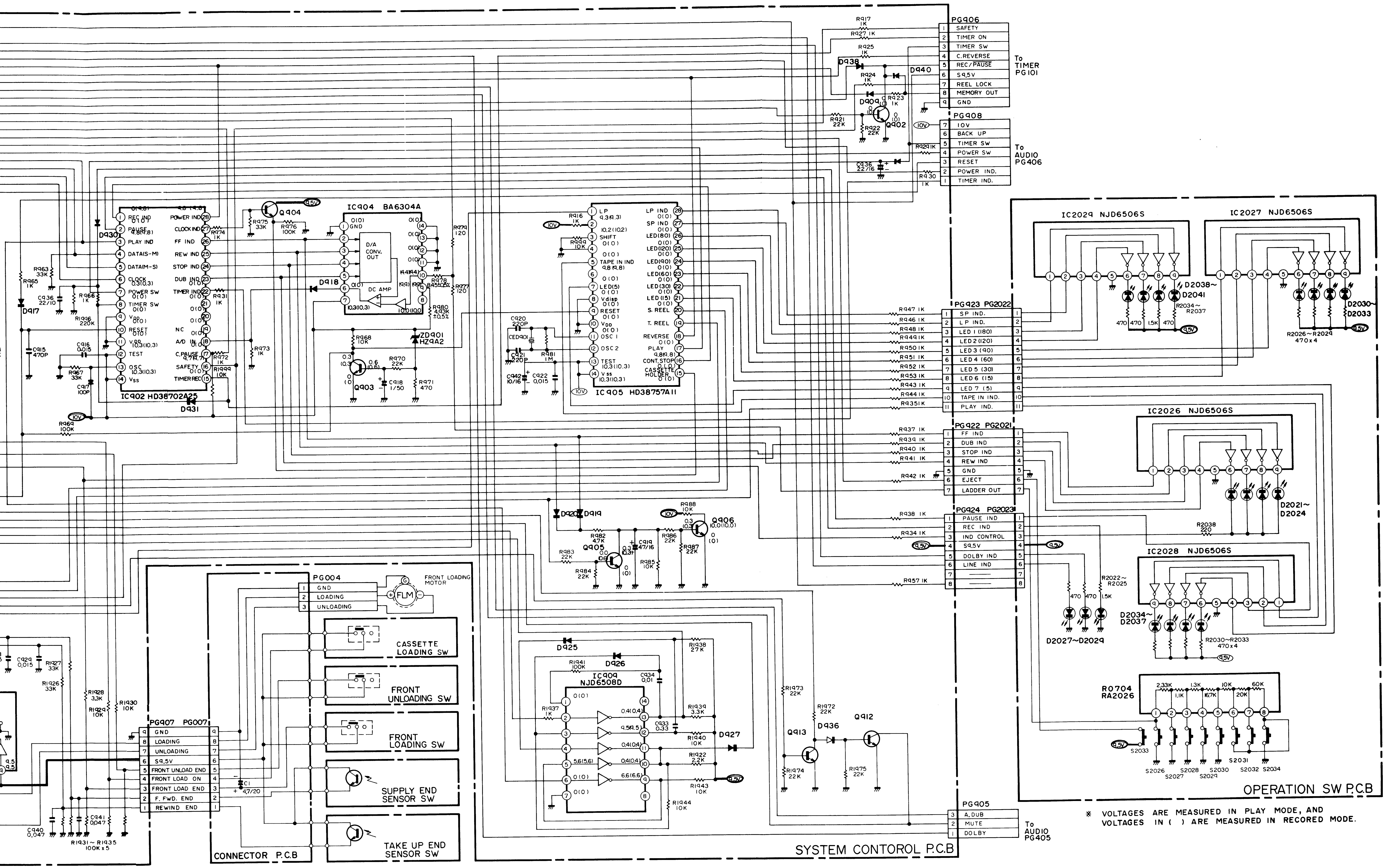
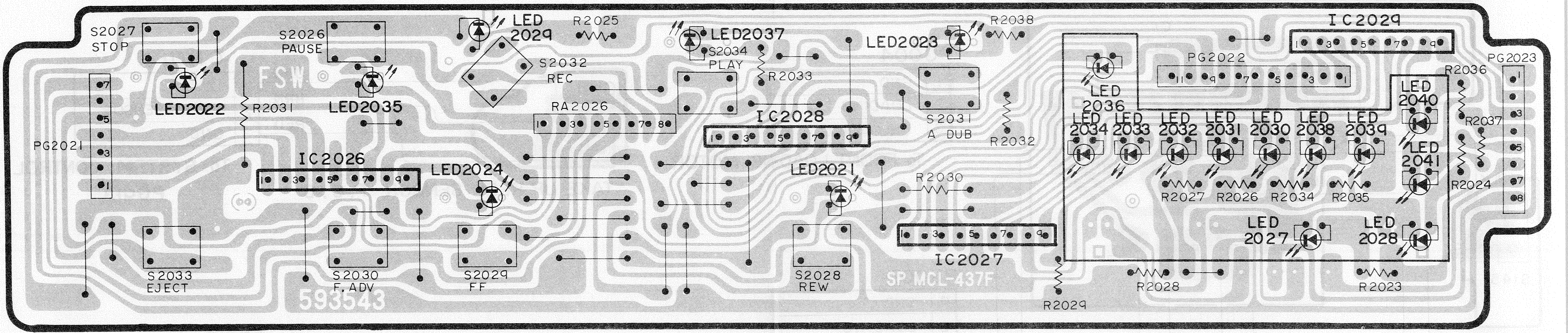
IC902 HD38702A25
IC904 BA6304A
IC905 HD38757A11
IC906 M54543L
IC907 M54543L
IC909 NJD6508D
Q911 2SA844
Q904
Q909
Q910
Q902
Q903
Q905
Q906
Q912
Q913
D934
D935
D915
D917
D918
D930
D931
D938
D940
D925
D926
D927
D936
D919
D920
ZD901 HZ9A2
D/A CONV. OUT
DC AMP
STOP LOAD UNLOAD BRAKE
SW CONTROL
PG906
SAFETY
TIMER ON
TIMER SW
C.REVERSE
REC/PAUSE
S9.5V
REEL LOCK
MEMORY OUT
GND
PG908
10V
BACK UP
TIMER SW
POWER SW
RESET
POWER IND.
TIMER IND.
PG923 PG202
SP IND.
LP IND.
LED 1 (180)
LED 2 (120)
LED 3 (90)
LED 4 (60)
LED 5 (30)
LED 6 (15)
LED 7 (5)
TAPE IN IND.
PLAY IND.
PG922 PG20
FF IND
DUB IND
STOP IND
REW IND
GND
EJECT
LADDER OUT
PG924 PG20
PAUSE IND
REC IND
IND CONTROL
S9.5V
DOLBY IND
LINE IND
PG905
A.DUB
MUTE
DOLBY
PG004
GND
LOADING
UNLOADING
FRONT LOADING MOTOR
FLM
CASSETTE LOADING SW
FRONT UNLOADING SW
FRONT LOADING SW
SUPPLY END SENSOR SW
TAKE UP END SENSOR SW
PG907 PG007
GND
LOADING
UNLOADING
S9.5V
FRONT UNLOAD END
FRONT LOAD ON
FRONT LOAD END
F. FWD. END
REWIND END
CONNECTOR P.C.B
SYSTEM CONTOROL P.C.B
COCK
DATA(M-S)
DATA(S-H)
CYL·ON
REVERSE
SEARCH
RM(-S)
RM(-)
RM(+)
LM(-)
LM(+)
END(EST)
END(ESS)
FL END
AUTO REW
REEL LOCK
CYL LOCK
MODE 2
MODE 1
MODE 0
ENABLE
CUE SIG
DATA(S-H)
TAPE CONT
CONT STOP
LM(-)IN
LM(+)IN
FLM(-)
FLM(+)
Vdisp
RESET
VBB
VDD
OSC
NC
TEST
Vss
EJECT
MONITOR CUT
EST
ESS
LP
SP
T. REEL
CLOCK
DATA MAIN
MODE 2
MODE 1
MODE 0
SLOW
FL ON
FUL END
FL END
REC IND
PAUSE
PLAY IND
DATA(S-M)
DATA(M-S)
CLOCK
POWER SW
TIMER SW
VDD
RESET
VDD
TEST
OSC
Vss
POWER IND
CLOCK IND
FF IND
REW IND
STOP IND
DUB IND
TIMER IND
NC
A/D IN
C.PAUSE
SAFETY
TIMER REC
LP
SHIFT
TAPE IN IND
LED(5)
Vdisp
RESET
VDD
OSC 1
OSC 2
TEST
Vss
LP IND
SP IND
LED(80)
LED(120)
LED(90)
LED(60)
LED(30)
LED(15)
S. REEL
T. REEL
REVERSE
PLAY
CONT. STOP
CASSETTE HOLDER
10V
9.5V
R1931~R1935 100K x 5


PG906
SAFETY
TIMER ON
TIMER SW
C.REVERSE
REC/PAUSE
S9.5V
REEL LOCK
MEMORY OUT
GND
To TIMER PG101
PG908
10V
BACK UP
TIMER SW
POWER SW
RESET
POWER IND.
TIMER IND.
To AUDIO PG406
R917 1K
R927 1K
R925 1K
D938
D940
R924 1K
D909
R923 1K
Q902
R921 22K
R922 22K
R929 1K
C936 22/16
R930 1K
IC902 HD38702A25
REC IND
PAUSE
PLAY IND
DATA(S-M)
DATA(M-S)
CLOCK
POWER SW
TIMER SW
VDD
RESET
VDD
TEST
OSC
Vss
POWER IND
CLOCK IND
FF IND
REW IND
STOP IND
DUB IND
TIMER IND
NC
A/D IN
C.PAUSE
SAFETY
TIMER REC
D930
D917
D931
R963 33K
R965 1K
C936 22/10
R966 1K
R996 220K
C915 470P
C916 0.015
R967 33K
C917 100P
R969 100K
R974 1K
R931 1K
R972 1K
R1999 10K
R973 1K
Q904
R975 33K
R976 100K
IC904 BA6304A
GND
D/A CONV. OUT
DC AMP
D918
R979 120
R978 845±0.5%
R977 120
R980 4.93K ±0.5%
ZD901 HZ9A2
R968 10K
Q903
R970 22K
C918 1/50
R971 470
IC905 HD38757A11
LP
SHIFT
TAPE IN IND
LED(5)
Vdisp
RESET
VDD
OSC 1
OSC 2
TEST
Vss
LP IND
SP IND
LED(80)
LED(120)
LED(90)
LED(60)
LED(30)
LED(15)
S. REEL
T. REEL
REVERSE
PLAY
CONT. STOP
CASSETTE HOLDER
R916 1K
R999 10K
C920 220P
CED901
C921 220P
R981 1M
C942 10/16
C922 0.015
PG923 PG2022
SP IND.
LP IND.
LED 1 (180)
LED 2 (120)
LED 3 (90)
LED 4 (60)
LED 5 (30)
LED 6 (15)
LED 7 (5)
TAPE IN IND.
PLAY IND.
R947 1K
R946 1K
R948 1K
R949 1K
R950 1K
R951 1K
R952 1K
R953 1K
R943 1K
R944 1K
R935 1K
PG922 PG2021
FF IND
DUB IND
STOP IND
REW IND
GND
EJECT
LADDER OUT
R937 1K
R939 1K
R940 1K
R941 1K
R942 1K
PG924 PG2023
PAUSE IND
REC IND
IND CONTROL
S9.5V
DOLBY IND
LINE IND
R938 1K
R934 1K
R957 1K
D920
D919
R988 10K
Q906
R982 47K
Q905
C919 47/16
R986 22K
R987 22K
R983 22K
R984 22K
R985 10K
PG004
GND
LOADING
UNLOADING
FRONT LOADING MOTOR
FLM
CASSETTE LOADING SW
FRONT UNLOADING SW
FRONT LOADING SW
SUPPLY END SENSOR SW
TAKE UP END SENSOR SW
CONNECTOR P.C.B
PG907 PG007
GND
LOADING
UNLOADING
S9.5V
FRONT UNLOAD END
FRONT LOAD ON
FRONT LOAD END
F. FWD. END
REWIND END
C1 47/20
C929 0.015
R1927 33K
R1926 33K
R1928 3.3K
R1929 10K
R1930 10K
C940 0.047
C941 0.047
R1931~R1935 100K×5
D925
D926
R1941 100K
R1938 27K
IC909 NJD6508D
C934 0.01
R1937 1K
R1939 3.3K
C933 0.33
R1940 10K
D927
R1922 2.2K
R1943 10K
R1944 10K
R1973 22K
R1972 22K
Q913
D936
Q912
R1974 22K
R1975 22K
PG905
A. DUB
MUTE
DOLBY
To AUDIO PG405
SYSTEM CONTOROL P.C.B
IC2029 NJD6506S
IC2027 NJD6506S
D2038~D2041
R2034~R2037
D2030~D2033
R2026~R2029 470×4
IC2026 NJD6506S
D2021~D2024
R2038 220
IC2028 NJD6506S
R2022~R2025
D2034~D2037
D2027~D2029
R2030~R2033 470×4
R0704 RA2026
2.33K
1.1K
1.3K
16.7K
10K
20K
60K
S2033
S2026
S2027
S2028
S2029
S2030
S2031
S2032
S2034
OPERATION SW P.C.B
9.5V
10V

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.

OPERATION SWITCH


S2027
STOP
S2026
PAUSE
LED 2029
R2025
LED2037
S2034
PLAY
R2038
LED2023
IC2029
PG2023
S2032
REC
R2033
PG2022
R2036
LED2022
R2031
LED2035
FSW
RA2026
IC2028
S2031
A DUB
LED 2036
LED 2040
R2037
PG2021
LED 2034
LED 2033
LED 2032
LED 2031
LED 2030
LED 2038
LED 2039
LED 2041
R2032
IC2026
LED2024
LED2021
R2030
R2027
R2026
R2034
R2035
R2024
LED 2027
LED 2028
IC2027
S2033
EJECT
S2030
F. ADV
S2029
FF
S2028
REW
SP MCL-437F
593543
R2029
R2028
R2023

OPERATION SWITCH P.C.B.

IC2026

1	2	3	4	5	6	7	8	9
0(0)	0(0)	0(0)	0(0)	0(0)	3.1(3.1)	3.1(3.1)	3.1(3.1)	3.1(3.1)

IC2027

1	2	3	4	5	6	7	8	9
9.8(9.8)	9.8(9.8)	9.8(9.8)	9.8(9.8)	0(0)	0(0)	0(0)	0(0)	0(0)

IC2028

1	2	3	4	5	6	7	8	9
9.8(9.8)	9.8(9.8)	0(0)	9.8(9.8)	0(0)	0(0)	6.8(6.8)	0(0)	0(0)

IC2029

1	2	3	4	5	6	7	8	9
0(0)	9.8(9.8)	9.8(9.8)	9.8(9.8)	0(0)	0(0)	0(0)	0(0)	7.5(7.5)

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.

PG2021

7	LADDER OUT
6	EJECT
5	GND
4	REW IND
3	STOP IND
2	DUS IND
1	FF IND

To
SYSTEM CONTROL
PG922

PG2022

1	SP IND
2	LP IND
3	LED 1 (180)
4	LED 2 (120)
5	LED 3 (90)
6	LED 4 (60)
7	LED 5 (30)
8	LED 6 (15)
9	LED 7 (5)
10	TAPE IN IND
11	PLAY IND

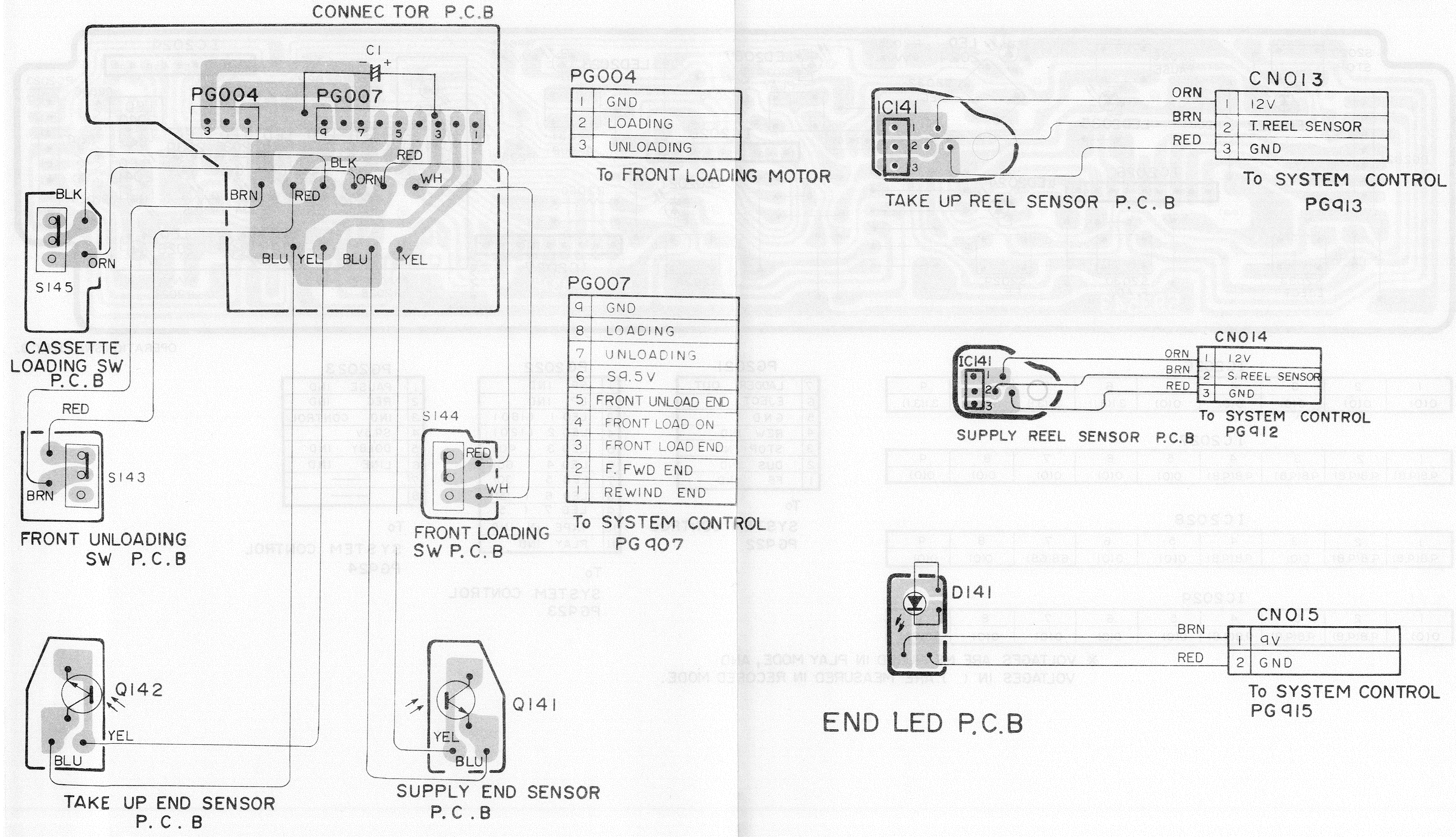
To
SYSTEM CONTROL
PG923

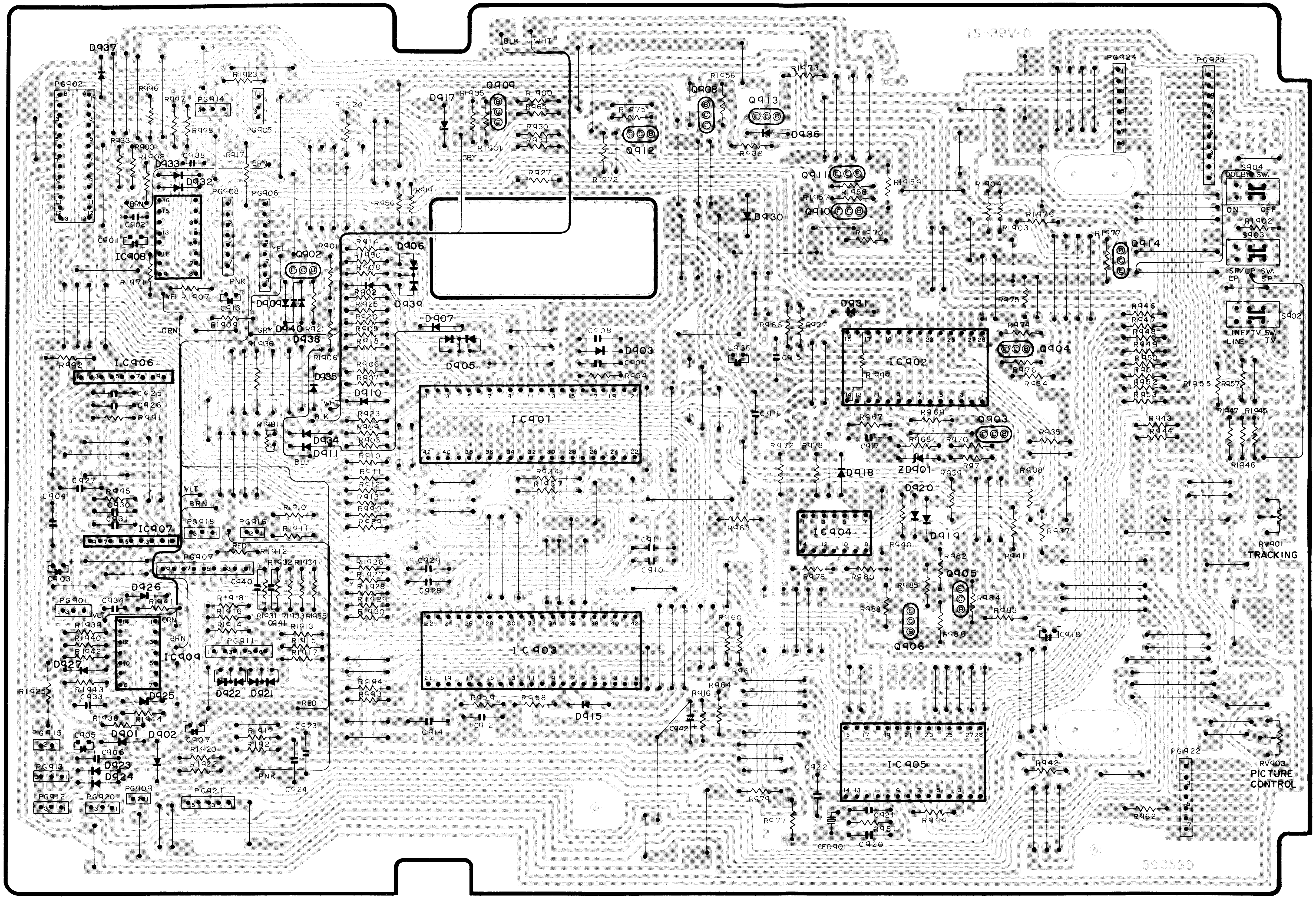
PG2023

1	PAUSE IND
2	REC IND
3	IND CONTROL
4	S9.5V
5	DOLBY IND
6	LINE IND
7	———
8	———

To
SYSTEM CONTROL
PG924

SYSTEM CONTROL CIRCUMFERENCE CIRCUIT BOARD


CONNEC TOR P.C.B
C1
PG004
PG007
3
1
9
7
5
3
1
BLK
RED
BLK
ORN
WH
BRN
RED
BLU
YEL
BLU
YEL
ORN
S145
CASSETTE LOADING SW P.C.B
RED
S143
BRN
FRONT UNLOADING SW P.C.B
S144
RED
WH
FRONT LOADING SW P.C.B
Q142
YEL
BLU
TAKE UP END SENSOR P.C.B
Q141
YEL
BLU
SUPPLY END SENSOR P.C.B
PG004
1 GND
2 LOADING
3 UNLOADING
To FRONT LOADING MOTOR
PG007
9 GND
8 LOADING
7 UNLOADING
6 S9.5V
5 FRONT UNLOAD END
4 FRONT LOAD ON
3 FRONT LOAD END
2 F. FWD END
1 REWIND END
To SYSTEM CONTROL PG907
IC141
1
2
3
ORN
BRN
RED
CN013
1 12V
2 T. REEL SENSOR
3 GND
To SYSTEM CONTROL PG913
TAKE UP REEL SENSOR P.C.B
IC141
1
2
3
ORN
BRN
RED
CN014
1 12V
2 S. REEL SENSOR
3 GND
To SYSTEM CONTROL PG912
SUPPLY REEL SENSOR P.C.B
D141
BRN
RED
CN015
1 9V
2 GND
To SYSTEM CONTROL PG915
END LED P.C.B


1S-39V-0
BLK
WHT
GRY
BRN
YEL
PNK
ORN
VLT
RED
BLU
IC901
IC902
IC903
IC904
IC905
IC906
IC907
IC908
IC909
Q902
Q903
Q904
Q905
Q906
Q908
Q909
Q910
Q911
Q912
Q913
Q914
PG901
PG902
PG905
PG906
PG907
PG908
PG909
PG911
PG912
PG913
PG914
PG915
PG916
PG918
PG920
PG921
PG922
PG923
PG924
S902
S903
S904
DOLBY SW.
ON
OFF
SP/LP SW.
LP
SP
LINE/TV SW.
LINE
TV
RV901
TRACKING
RV903
PICTURE CONTROL
ZD901
CED901
593539

SYSTEM CONTROL P.C.B

1	2	3	4	5	6	
0 (0)	0 (0)	10 (10)	0 (9.9)	0 (0)	9.9 (0)	0
42	41	40	39	38	37	
—	—	—	10 (10)	0 (0)	0 (0)	0

15	16	17	18	19	20	
0 (0)	9.7 (9.7)	0 (0)	0 (0)		0 (0)	0
14	13	12	11	10	9	
10.3 (10.3)	—	10.3 (10.3)	0 (0)	0 (0)	0 (0)	0

22	23	24	25	26	27	
0 (0)	0 (0)	9.3 (9.3)	0 (0)	9.8 (9.8)	0.3 (0.3)	0.3
21	20	19	18	17	16	
10.3 (10.3)	10.3 (10.3)		—	0 (0)	0 (0)	0

IC904

1	2	3	4	5	6	
0 (0)	—	—	—	—	0 (0)	10.3
14	13	12	11	10	9	
0 (0)	0 (0)	0 (0)	0 (0)	4.4 (4.4)	9.9 (9.9)	10.0

15	16	17	18	19	20	
0 (0)	0 (0)	9.8 (9.8)	0 (0)	—	—	0
14	13	12	11	10	9	
10.3 (10.3)	10.3 (10.3)	—	—	0 (0)	0 (0)	0

IC906

1	2	3	4	5	6	
9.5 (9.5)	11.8 (11.8)	0 (0)	0 (0)	0 (0)	0 (0)	0

IC907

9	8	7	6	5	4	
9.5 (9.5)	11.8 (11.8)	0 (0)	0 (0)	0 (0)	0 (0)	0

PG902

	B		A
1	MONTIOR CUT	1	PAUSE
2	CTL IN	2	REC START
3	CLOCK	3	SLOW
4	CTL OUT	4	REVERSE
5	TRACKING	5	F. ADV
6	TRACKING	6	GND
7	SPEED PB	7	GND
8	REEL M(−)	8	LP
9	REEL M(+)	9	SP
10	REEL M(−)S	10	CYL. LOCK
11	CYL. ON	11	12V
12	SEARCH	12	PB
13	POWER CONTROL	13	REC

To
SERVO/REGULATOR
PG1150

1	S
2	L
3	L
4	L
5	L
6	L
7	L
8	L
9	L
10	T
11	P

PG922

1	FF IND
2	DUB IND
3	STOP IND
4	REW IND
5	GND
6	EJECT
7	LADOER OUT

To
OPERATION SW
PG2021

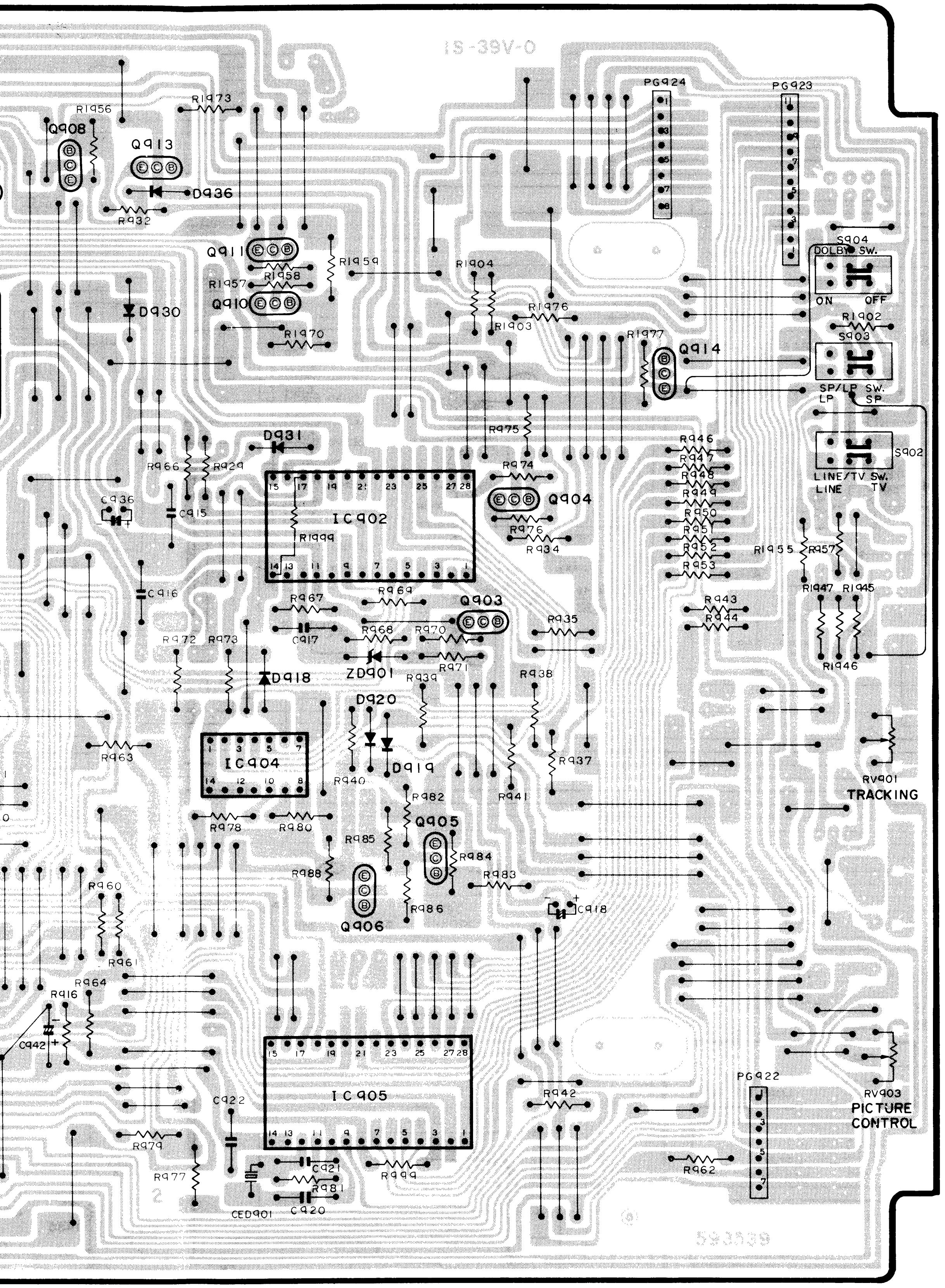
PG924

8	VTR
7	TV IND
6	LINE IND
5	DOLBY IND
4	S9.5V
3	IND CONTROL
2	REC IND
1	PAUSE IND

To
OPERATION SW
PG2023

1
2
3
4
5

※ VOLTAGES ARE ME
VOLTAGES IN ( )ARE


IS-39V-0
Q908
Q913
D936
R932
R1956
R1973
PG924
PG923
Q911
R1958
R1959
R1957
Q910
R1970
D930
R1904
R1976
R1903
R1977
S904
DOLBY SW.
ON
OFF
R1902
S903
Q914
SP/LP SW.
LP
SP
S902
LINE/TV SW.
LINE
TV
D931
R966
R929
R975
R974
C936
C915
IC902
R1999
Q904
R976
R934
R946
R947
R948
R949
R950
R951
R952
R953
R1955
R1957
R1947
R1945
R1946
C916
R967
R969
Q903
C917
R968
R970
R971
R935
R943
R944
R972
R973
D918
ZD901
R939
R938
D920
IC904
D919
R982
R937
R963
R940
R941
RV901
TRACKING
R978
R980
Q905
R985
R984
R988
R983
Q906
R986
C918
R960
R961
R964
R916
C942
IC905
PG922
R942
RV903
PICTURE
CONTROL
C922
R979
R977
C921
R981
R999
R962
CED901
C920
593539

SYSTEM CONTROL P.C.B

IC901

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
0 (0)	0 (0)	10 (10)	0 (9.9)	0 (0)	9.9 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	—		10.3 (10.3)	10.3 (10.3)
42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22
—	—	—	10 (10)	0 (0)	0 (0)	0 (0)	0 (0)	10 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	10.3 (10.3)	—	—	0.3 (0.3)	0.3 (0.3)	9.8 (9.8)	10.3 (10.3)

IC902

15	16	17	18	19	20	21	22	23	24	25	26	27	28
0 (0)	9.7 (9.7)	0 (0)	0 (0)		0 (0)	0 (0)	0 (0)	—	—	—	—	—	9.8 (9.8)
14	13	12	11	10	9	8	7	6	5	4	3	2	1
10.3 (10.3)	—	10.3 (10.3)	0 (0)	0 (0)	0 (0)	0 (0)	10.3 (10.3)	—	—	—	9.8 (9.8)	0 (0)	0 (9.8)

Q902

B	0 (0)
C	0 (9.0)
E	0 (0)

Q903

B	0.6 (0.6)
C	0.3 (0.3)
E	0 (0)

Q904

B	—
C	9.5 (9.5)
E	9.0 (9.0)

Q905

B	0.6 (0.6)
C	0.3 (0.3)
E	0 (0)

IC903

22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
0 (0)	0 (0)	9.3 (9.3)	0 (0)	9.8 (9.8)	0.3 (0.3)	0.3 (0.3)	—	—	—	0 (0)	0 (0)	0 (0)	0 (0)	10.3 (10.3)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
10.3 (10.3)	10.3 (10.3)		—	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	9.8 (9.8)	—	—	0 (0)	0 (0)

IC904

1	2	3	4	5	6	7
0 (0)	—	—	—	—	0 (0)	10.3 (10.3)
14	13	12	11	10	9	8
0 (0)	0 (0)	0 (0)	0 (0)	4.4 (4.4)	9.9 (9.9)	10.0 (10.0)

Q906

B	0.3 (0.3)
C	10.0 (10.0)
E	0 (0)

Q908

B	0 (0.6)
C	0 (0)
E	0 (0)

Q909

B	0 (0)
C	0 (0)
E	0 (0)

Q910

B	0 (0)
C	0 (0)
E	0 (0)

Q911

B	0 (0)
C	0 (0)
E	0 (0)

Q914

B	9.6 (9.6)
C	9.5 (9.5)
E	9.0 (9.0)

IC905

15	16	17	18	19	20	21	22	23	24	25	26	27	28
0 (0)	0 (0)	9.8 (9.8)	0 (0)	—	—	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
14	13	12	11	10	9	8	7	6	5	4	3	2	1
10.3 (10.3)	10.3 (10.3)	—	—	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	9.8 (9.8)	0 (0)	0 (0)	10.2 (10.2)	9.3 (9.3)

IC908

16	0 (0)	1	9.0 (9.0)
15	0 (0)	2	0 (0)
14	0 (0)	3	0 (0)
13	9.5 (9.5)	4	6.0 (6.0)
12	9.5 (9.5)	5	—
11	—	6	0 (0)
10	0 (0)	7	—
9	9.8 (0)	8	9.0 (9.0)

IC909

14		1	0 (0)
13	0.4 (0.4)	2	—
12	9.5 (9.5)	3	—
11	0.4 (0.4)	4	—
10	0.4 (0.4)	5	6.6 (6.6)
9	6.6 (6.6)	6	0 (0)
8		7	0 (0)

IC906

1	2	3	4	5	6	7	8	9
9.5 (9.5)	11.8 (11.8)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	11.8 (11.8)	9.5 (9.5)

PG909

1	—
2	BACK UP

To
TIMER
PG102

PG915

1	END LED
2	GND

To END LED
CN015

IC907

9	8	7	6	5	4	3	2	1
9.5 (9.5)	11.8 (11.8)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	11.8 (11.8)	9.5 (9.5)

PG916

1	DEW
2	10 V

To DEW SENSOR
CN 016

PG901

1	GND
2	S12V
3	S9.5V

To REGULATOR
PG1152

PG905

1	DOLBY NR
2	MUTE
3	A DUB

To AUDIO
PG405

PG912

1	12V
2	S REEL
3	GND

To SUPPLY REEL SENSOR
CN012

PG902

	B		A
1	MONTIOR CUT	1	PAUSE
2	CTL IN	2	REC START
3	CLOCK	3	SLOW
4	CTL OUT	4	REVERSE
5	TRACKING	5	F. ADV
6	TRACKING	6	GND
7	SPEED PB	7	GND
8	REEL M(−)	8	LP
9	REEL M(+)	9	SP
10	REEL M(−)S	10	CYL. LOCK
11	CYL. ON	11	12V
12	SEARCH	12	PB
13	POWER CONTROL	13	REC

To
SERVO/REGULATOR
PG1150

PG923

1	SP. IND
2	LP. IND
3	LED 1 (180)
4	LED 2 (120)
5	LED 3 (90)
6	LED 4 (60)
7	LED 5 (30)
8	LED 6 (15)
9	LED 7 (5)
10	TAPE IN IND
11	PLAY IND

To
OPERATION SW
PG2022

PG913

1	12 V
2	T. REEL
3	GND

To
TAKE UP REEL
SENSOR
CN013

PG914

1	—
2	SAFETY
3	10V

To SAFETY SW
CN014

PG918

1	GND
2	LOAD
3	UNLOAD

To LOADING MOTOR
CN018

PG920

1	PICTORE CONTROL
2	GND
3	PICTORE CONTROL

To Y/CHROMA
PG207

PG906

1	SAFTY
2	TIMER ON
3	TIMER SW
4	C. REVERSE
5	REC/PAUSE
6	S9.5V
7	REEL LOCK
8	MEMORY OUT
9	GND

To
TIMER
PG101

PG907

1	REWIND END
2	F. FWD END
3	FRONT LOAD END
4	FRONT LOAD ON
5	FRONT UNLOAD END
6	S9.5V
7	UN LOADING
8	LOADING
9	GND

To
CONNECTOR
CN007

PG908

1	10V
2	TIMEW SW
3	BACK UP
4	RESET
5	TIMER IND
6	POWER IND
7	POWER SW

To
AUDIO
PG406

PG911

1	GND
2	REVERS
3	REC/PLAY
4	REC/PAUSE
5	FF/REW
6	STOP

To
MECHA STATE SENSOR SW
CN011

PG921

1	TV/VTR
2	REMOTE
3	C. PAUSE
4	TUNER/LINE
5	GND

To
JACK
PG1704

PG922

1	FF IND
2	DUB IND
3	STOP IND
4	REW IND
5	GND
6	EJECT
7	LADOER OUT

To
OPERATION SW
PG2021

PG924

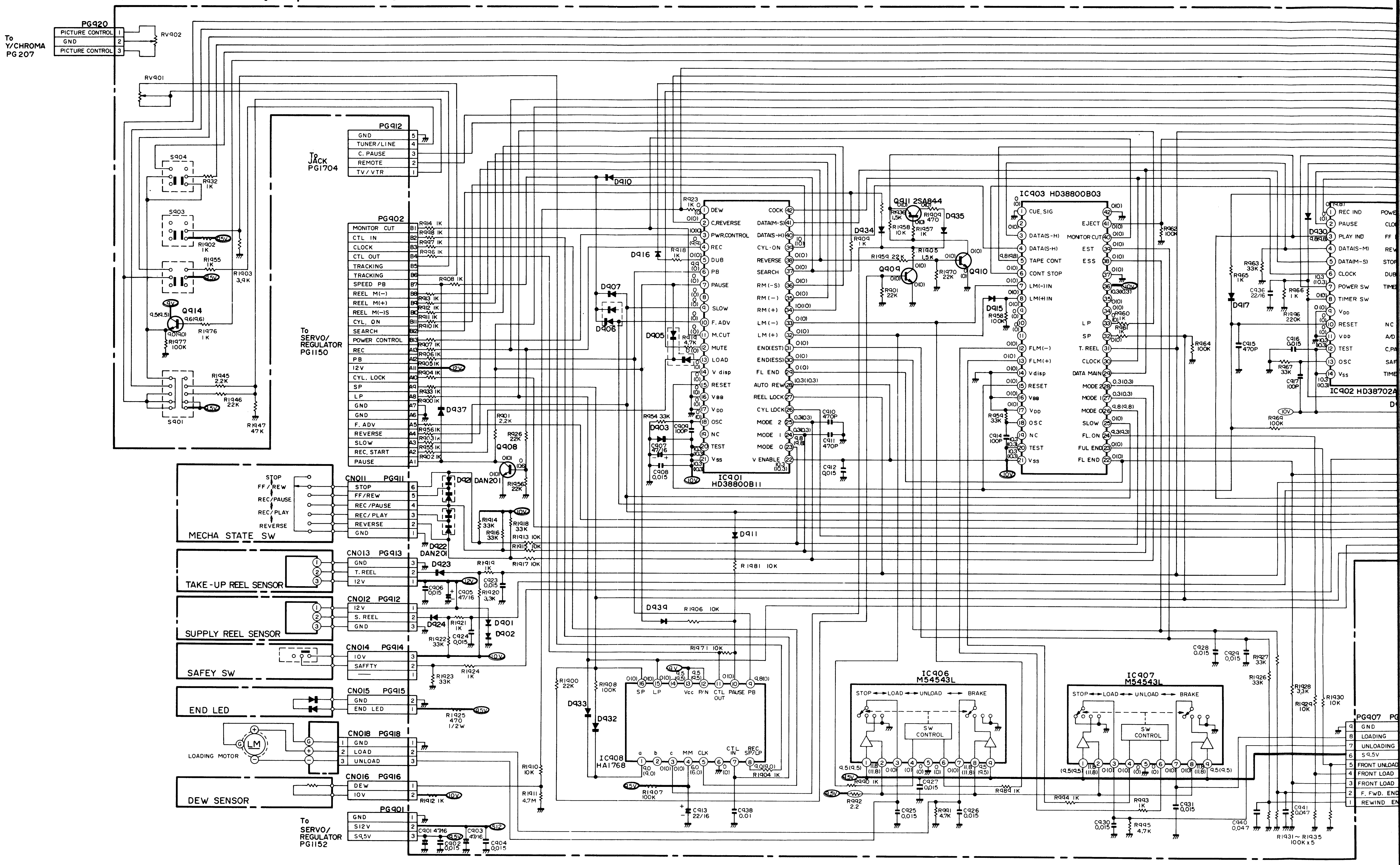
8	VTR
7	TV IND
6	LINE IND
5	DOLBY IND
4	S9.5V
3	IND CONTROL
2	REC IND
1	PAUSE IND

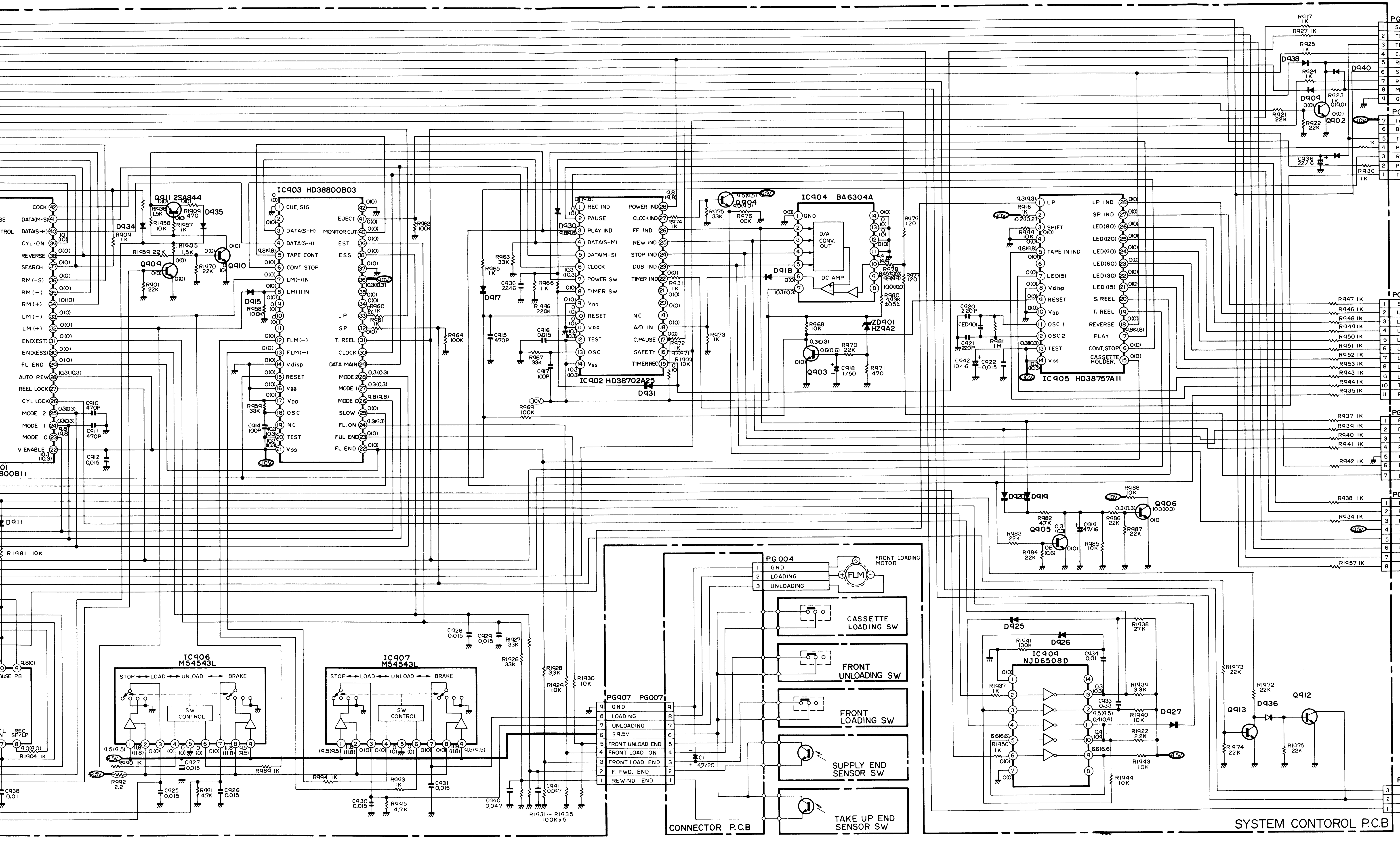
To
OPERATION SW
PG2023

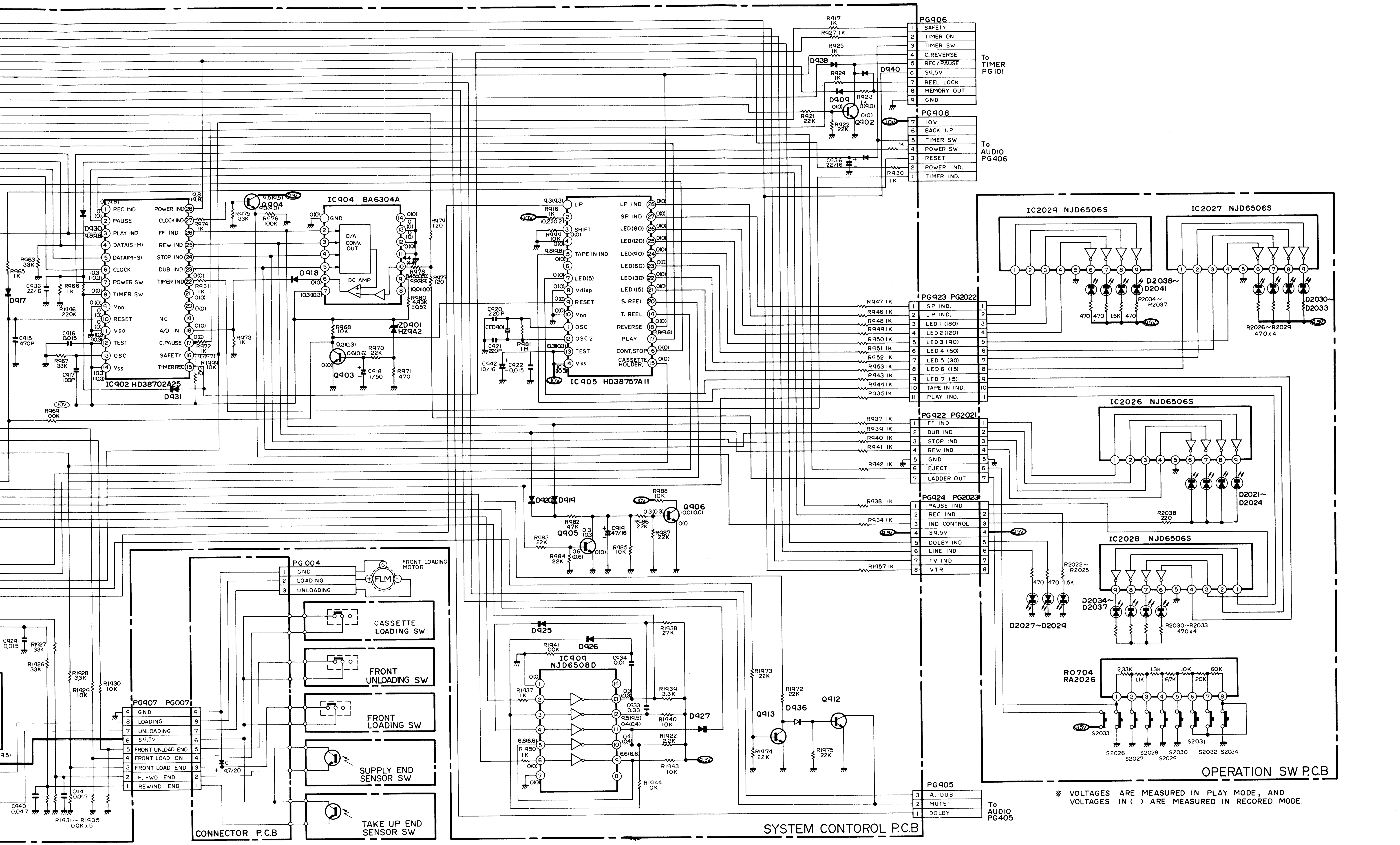
※ VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.

MEMO

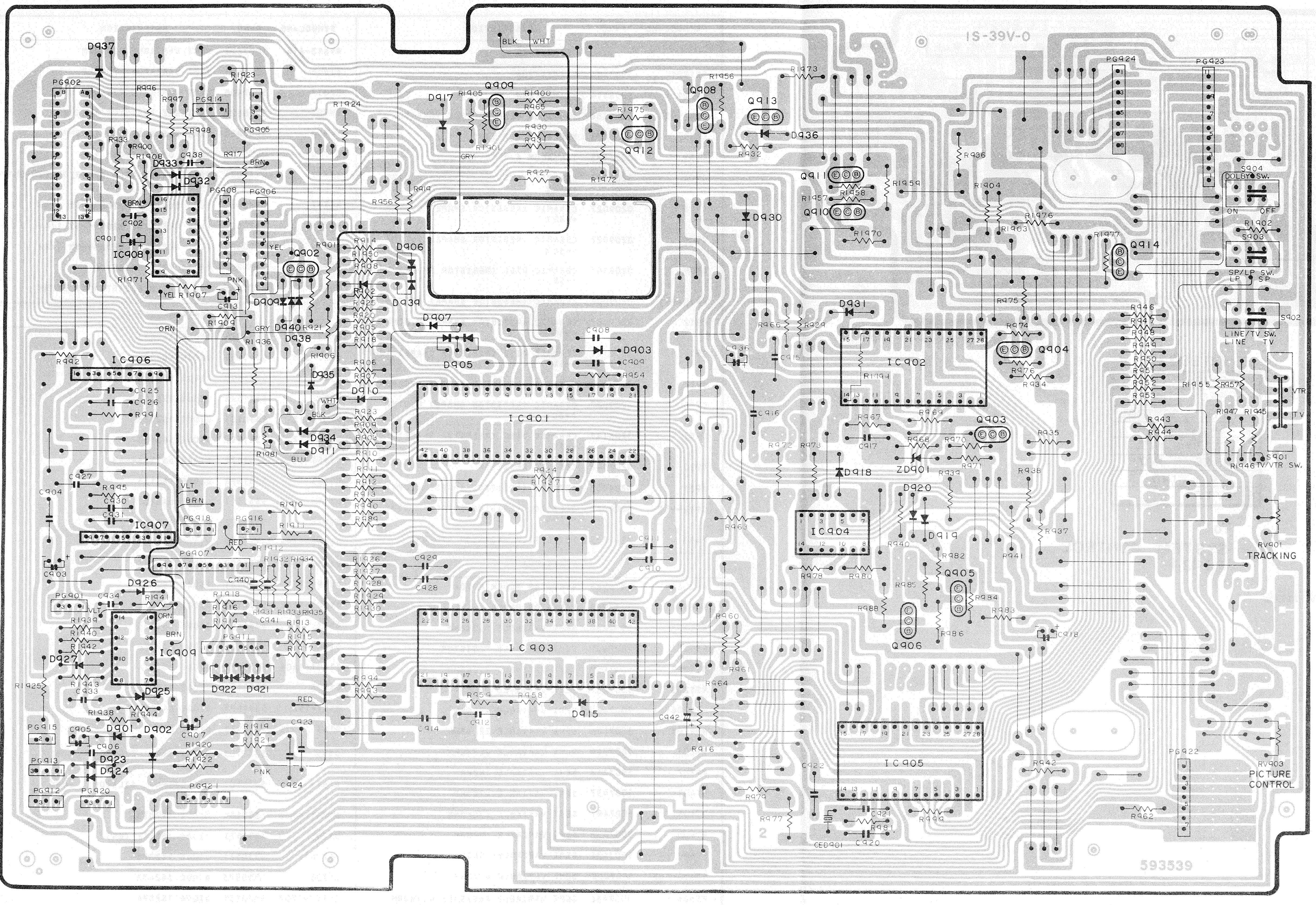
SYSTEM CONTROL/OPERATION SWITCH [Except for UK model]


To Y/CHROMA PG 207
PG920
PICTURE CONTROL
GND
PICTURE CONTROL
RV902
RV901
S904
S903
S901
Q914
To JACK PG1704
PG912
GND
TUNER/LINE
C. PAUSE
REMOTE
TV/VTR
To SERVO/ REGULATOR PG1150
PG902
MONITOR CUT
CTL IN
CLOCK
CTL OUT
TRACKING
TRACKING
SPEED PB
REEL M(−)
REEL M(+)
REEL M(−)S
CYL. ON
SEARCH
POWER CONTROL
REC
PB
12V
CYL. LOCK
SP
LP
GND
GND
F. ADV
REVERSE
SLOW
REC. START
PAUSE
MECHA STATE SW
STOP
FF/REW
REC/PAUSE
REC/PLAY
REVERSE
CN011 PG911
CN013 PG913
TAKE-UP REEL SENSOR
T. REEL
CN012 PG912
SUPPLY REEL SENSOR
S. REEL
CN014 PG914
SAFEY SW
SAFFTY
CN015 PG915
END LED
CN018 PG918
LOADING MOTOR
LOAD
UNLOAD
CN016 PG916
DEW SENSOR
DEW
To SERVO/ REGULATOR PG1152
PG901
S12V
S9.5V
Q408
DAN201
D910
D916
D907
D906
D905
D903
D911
D939
D933
D932
D937
D923
D924
D901
D902
IC901 HD38800B11
IC903 HD38800B03
IC902 HD38702A
Q911 2SA844
Q909
Q910
D934
D935
D915
D917
D930
IC908 HA1768
IC906 M54543L
IC907 M54543L
STOP LOAD UNLOAD BRAKE
SW CONTROL
PG907
GND
LOADING
UNLOADING
S9.5V
FRONT UNLOAD
FRONT LOAD
FRONT LOAD
F. FWD. END
REWIND END
R1931~R1935 100K x 5


IC903 HD38800B03
IC902 HD38702A25
IC904 BA6304A
IC905 HD38757A11
IC906 M54543L
IC907 M54543L
IC909 NJD6508D
Q911 2SA844
Q909
Q910
Q904
Q903
Q905
Q906
Q902
Q913
Q912
D934
D935
D915
D930
D917
D918
D931
ZD901 HZ9A2
D920
D919
D925
D926
D927
D936
D938
D940
D911
D/A CONV. OUT
DC AMP
COCK
DATA(M-S)
DATA(S-H)
CYL·ON
REVERSE
SEARCH
RM(-S)
RM(-)
RM(+)
LM(-)
LM(+)
END(EST)
END(ESS)
FL END
AUTO REW
REEL LOCK
CYL LOCK
MODE 2
MODE 1
MODE 0
V ENABLE
CUE, SIG
EJECT
MONITOR CUT
EST
ESS
TAPE CONT
CONT STOP
LM(-)IN
LM(+)IN
FLM(-)
FLM(+)
Vdisp
RESET
VBB
VDD
OSC
NC
TEST
VSS
LP
SP
T. REEL
CLOCK
DATA MAIN
MODE 2
MODE 1
MODE 0
SLOW
FL. ON
FUL END
FL END
REC IND
PAUSE
PLAY IND
DATA(S-M)
DATA(M-S)
POWER SW
TIMER SW
POWER IND
CLOCK IND
FF IND
REW IND
STOP IND
DUB IND
TIMER IND
A/D IN
C.PAUSE
SAFETY
TIMER REC
GND
SHIFT
TAPE IN IND
LED(5)
OSC 1
OSC 2
LP IND
SP IND
LED(80)
LED(120)
LED(90)
LED(60)
LED(30)
LED(15)
S. REEL
T. REEL
PLAY
CONT. STOP
CASSETTE HOLDER
STOP ◄► LOAD ◄► UNLOAD ◄► BRAKE
SW CONTROL
PG004
GND
LOADING
UNLOADING
FRONT LOADING MOTOR
FLM
CASSETTE LOADING SW
FRONT UNLOADING SW
FRONT LOADING SW
SUPPLY END SENSOR SW
TAKE UP END SENSOR SW
PG907 PG007
GND
LOADING
UNLOADING
S9.5V
FRONT UNLOAD END
FRONT LOAD ON
FRONT LOAD END
F. FWD. END
REWIND END
CONNECTOR P.C.B
PG906
SAFETY
TIMER
TIMER
C.REV
REC/P
S9.5V
REEL
MEMOR
GND
PG90
10V
BACK
TIMER
POWER
RESET
POWER
TIMER
PG923
SP IN
LP IN
LED 1
LED 2
LED 3
LED 4
LED 5
LED 6
LED 7
TAPE
PLAY
PG922
FF IN
DUB I
STOP
REW I
GND
EJECT
LADDE
PG924
PAUS
REC
IND O
S9.5V
DOLB
LINE
TV IN
VTR
PG9C
A. DU
MUTE
DOLB
R1931 ~ R1935 100K x 5
10V
9.5V
SYSTEM CONTOROL P.C.B


IC902 HD38702A25
IC904 BA6304A
IC905 HD38757A11
IC909 NJD6508D
IC2029 NJD6506S
IC2027 NJD6506S
IC2026 NJD6506S
IC2028 NJD6506S
Q902
Q903
Q904
Q905
Q906
Q912
Q913
D/A CONV. OUT
DC AMP
ZD901 HZ9A2
PG906
SAFETY
TIMER ON
TIMER SW
C.REVERSE
REC/PAUSE
S9.5V
REEL LOCK
MEMORY OUT
GND
To TIMER PG101
PG908
10V
BACK UP
TIMER SW
POWER SW
RESET
POWER IND.
TIMER IND.
To AUDIO PG406
PG923 PG2022
SP IND.
LP IND.
LED 1 (180)
LED 2 (120)
LED 3 (90)
LED 4 (60)
LED 5 (30)
LED 6 (15)
LED 7 (5)
TAPE IN IND.
PLAY IND.
PG922 PG2021
FF IND
DUB IND
STOP IND
REW IND
GND
EJECT
LADDER OUT
PG924 PG2023
PAUSE IND
REC IND
IND CONTROL
S9.5V
DOLBY IND
LINE IND
TV IND
VTR
PG905
A. DUB
MUTE
DOLBY
To AUDIO PG405
PG004
GND
LOADING
UNLOADING
FRONT LOADING MOTOR
FLM
CASSETTE LOADING SW
FRONT UNLOADING SW
FRONT LOADING SW
SUPPLY END SENSOR SW
TAKE UP END SENSOR SW
PG907 PG007
GND
LOADING
UNLOADING
S9.5V
FRONT UNLOAD END
FRONT LOAD ON
FRONT LOAD END
F. FWD. END
REWIND END
CONNECTOR P.C.B
SYSTEM CONTOROL P.C.B
OPERATION SW P.C.B
R0704 RA2026
S2026 S2027 S2028 S2029 S2030 S2031 S2032 S2033 S2034
D2038~D2041
D2030~D2033
D2021~D2024
D2027~D2029
D2034~D2037
R2026~R2029 470×4
R2030~R2033 470×4
D917 D918 D919 D920 D925 D926 D927 D930 D931 D936 D938 D940 D909

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.


IS-39V-0
593539
IC901
IC902
IC903
IC904
IC905
IC906
IC907
IC908
IC909
Q902
Q903
Q904
Q905
Q906
Q908
Q909
Q910
Q911
Q912
Q913
Q914
PG901
PG902
PG905
PG906
PG907
PG908
PG911
PG912
PG913
PG914
PG915
PG916
PG918
PG920
PG921
PG922
PG923
PG924
S901
TV/VTR SW.
S902
LINE/TV SW.
LINE TV
S903
SP/LP SW.
LP SP
S904
DOLBY SW.
ON OFF
VTR
TV
RV901
TRACKING
RV903
PICTURE
CONTROL
CED901
ZD901
BLK
WHT
GRY
YEL
BRN
ORN
PNK
RED
BLU
VLT

SYSTEM CONTROL P.C.B パターン面

1	2	3	4	5	6	7
0 (0)	0 (0)	10 (10)	0 (9.9)	0 (0)	9.9 (0)	0 (0)
42	41	40	39	38	37	36
—	—	—	10 (10)	0 (0)	0 (0)	0 (0)

IC90

15	16	17	18	19	20	21
0 (0)	9.7 (9.7)	0 (0)	0 (0)		0 (0)	0 (0)
14	13	12	11	10	9	8
10.3 (10.3)	—	10.3 (10.3)	0 (0)	0 (0)	0 (0)	0 (0)

22	23	24	25	26	27	28
0 (0)	0 (0)	9.3 (9.3)	0 (0)	9.8 (9.8)	0.3 (0.3)	0.3 (0.3)
21	20	19	18	17	16	15
10.3 (10.3)	10.3 (10.3)		—	0 (0)	0 (0)	0 (0)

IC904

1	2	3	4	5	6	7
0 (0)	—	—	—	—	0 (0)	10.3 (10.3)
14	13	12	11	10	9	8
0 (0)	0 (0)	0 (0)	0 (0)	4.4 (4.4)	9.9 (9.9)	10.0 (10.0)

IC9

15	16	17	18	19	20	21
0 (0)	0 (0)	9.8 (9.8)	0 (0)	—	—	0 (0)
14	13	12	11	10	9	8
10.3 (10.3)	10.3 (10.3)	—	—	0 (0)	0 (0)	0 (0)

IC906

1	2	3	4	5	6	7
9.5 (9.5)	11.8 (11.8)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

IC907

9	8	7	6	5	4	3
9.5 (9.5)	11.8 (11.8)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

PG902

	B		A
1	MONITOR CUT	1	PAUSE
2	CTL IN	2	REC START
3	CLOCK	3	SLOW
4	CTL OUT	4	REVERSE
5	TRACKING	5	F. ADV
6	TRACKING	6	GND
7	SPEED PB	7	GND
8	REEL M(−)	8	LP
9	REEL M(+)	9	SP
10	REEL M(−)S	10	CYL LOCK
11	CYL ON	11	12V
12	SEARCH	12	PB
13	POWER CONTROL	13	REC

To
SERVO/REGULATOR
PG1150

PG923

1	SP IND
2	LP IND
3	LED 1 (18
4	LED 2 (12
5	LED 3 (9
6	LED 4 (6
7	LED 5 (3
8	LED 6 (
9	LED 7 (5
10	TAPE IN I
11	PLAY IND

To
OPERAT
PG2022

PG922

1	FF IND
2	DUB IND
3	STOP IND
4	REW IND
5	GND
6	EJECT
7	LEDDER OUT

To
OPERATION SW
PG2021

PG924

8	VTR
7	TV IND
6	LINE IND
5	DOLBY IND
4	S9.5V
3	IND CONTROL
2	REC IND
1	PAUSE IND

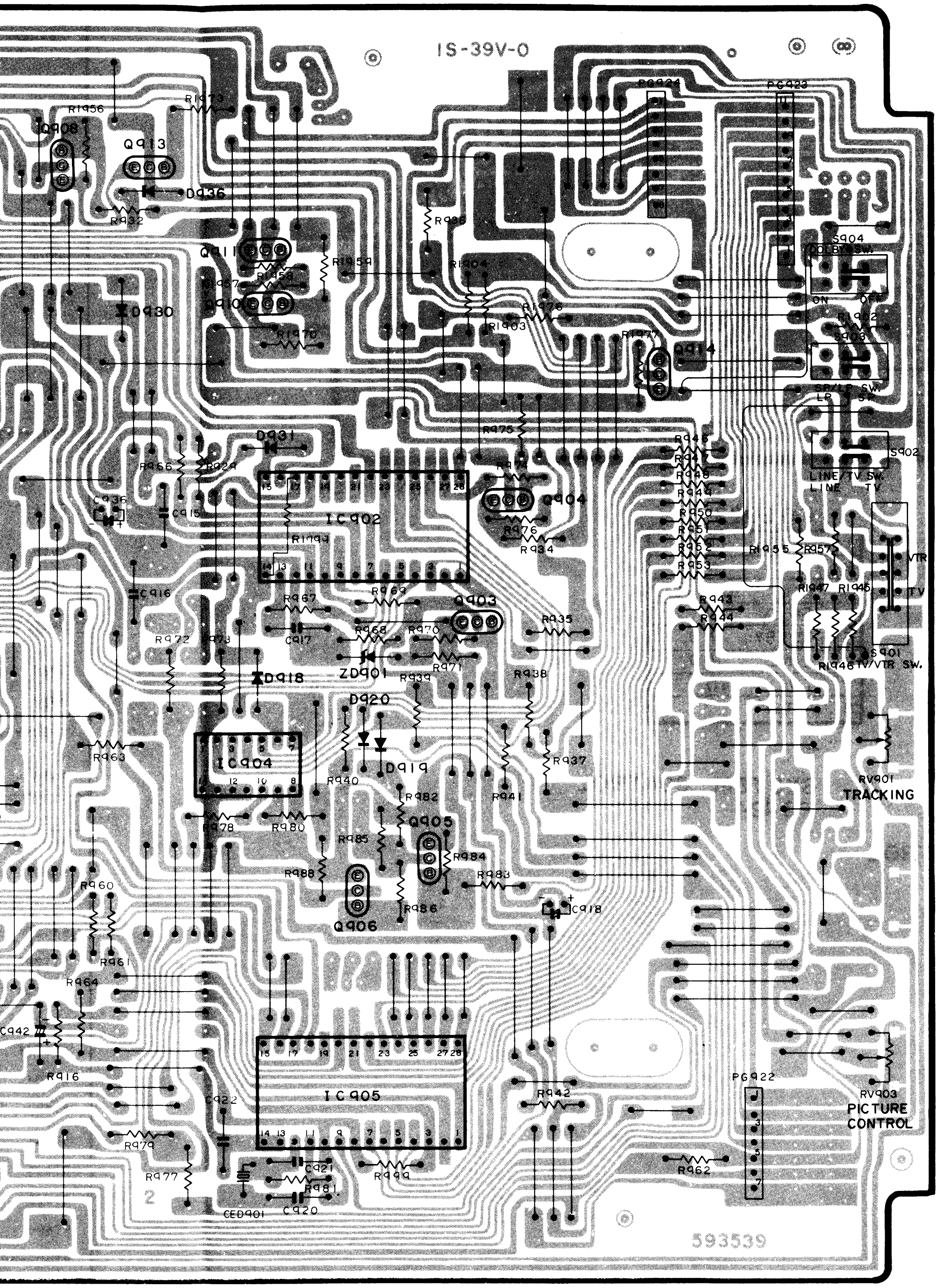
To
OPERATION SW
PG 2023

PG92

1	TV/VTR
2	REMOTE
3	C. PAUSE
4	TUNER/L
5	GND

To
JACK
PG17

※ VOLTAGES ARE MEASURED IN PL
VOLTAGES IN ( ) ARE MEASURED


IS-39V-0
593539
Q908
Q913
D936
R1956
R1973
R932
R935
Q911
Q910
D930
R1959
R1970
PG924
PG923
S904 DOLBY SW
ON
OFF
R1904
R1903
R1978
R1977
Q914
SP/LP SW
LP SP
R975
D931
R966
R924
C936
C918
IC902
R1944
Q904
R976
R934
R945
R955
R957
S902
LINE/TV SW.
LINE TV
VTR
TV
S901 TV/VTR SW.
R1947
R1945
R1946
C916
R967
R969
Q903
R972
R973
C917
R968
R970
R971
ZD901
R935
R938
R939
D918
D920
D919
R937
IC904
R940
R982
Q905
R941
R963
R978
R980
R985
R984
R983
RV901 TRACKING
R988
R960
Q906
R986
C918
R961
R964
C942
R916
C922
IC905
R942
PG922
RV903 PICTURE CONTROL
R979
R977
C921
R981
R999
R962
CED901
C920

SYSTEM CONTROL P.C.B パターン面

IC901

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
0 (0)	0 (0)	10 (10)	0 (9.9)	0 (0)	9.9 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	—		10.3 (10.3)	10.3 (10.3)
42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22
—	—	—	10 (10)	0 (0)	0 (0)	0 (0)	0 (0)	10 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	10.3 (10.3)	—	—	0.3 (0.3)	0.3 (0.3)	9.8 (9.8)	10.3 (10.3)

IC902

15	16	17	18	19	20	21	22	23	24	25	26	27	28
0 (0)	9.7 (9.7)	0 (0)	0 (0)		0 (0)	0 (0)	0 (0)	—	—	—	—	—	9.8 (9.8)
14	13	12	11	10	9	8	7	6	5	4	3	2	1
10.3 (10.3)	---	10.3 (10.3)	0 (0)	0 (0)	0 (0)	0 (0)	10.3 (10.3)	—	—	—	9.8 (9.8)	0 (0)	0 (9.8)

	Q902	Q903	Q904	Q905
B	0 (0)	0.6 (0.6)	—	0.6 (0.6)
C	0 (9.0)	0.3 (0.3)	9.5 (9.5)	0.3 (0.3)
E	0 (0)	0 (0)	9.0 (9.0)	0 (0)

IC903

22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
0 (0)	0 (0)	9.3 (9.3)	0 (0)	9.8 (9.8)	0.3 (0.3)	0.3 (0.3)	—	—	—	0 (0)	0 (0)	0 (0)	0 (0)	10.3 (10.3)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
10.3 (10.3)	10.3 (10.3)		—	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	9.8 (9.8)	—	—	0 (0)	0 (0)

IC904

1	2	3	4	5	6	7
0 (0)	—	—	—	—	0 (0)	10.3 (10.3)
14	13	12	11	10	9	8
0 (0)	0 (0)	0 (0)	0 (0)	4.4 (4.4)	9.9 (9.9)	10.0 (10.0)

	Q906	Q908	Q909	Q910	Q911	Q914
B	0.3 (0.3)	0 (0.6)	0 (0)	0 (0)	0 (0)	9.6 (9.6)
C	10.0 (10.0)	0 (0)	0 (0)	0 (0)	0 (0)	9.5 (9.5)
E	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	9.0 (9.0)

IC905

15	16	17	18	19	20	21	22	23	24	25	26	27	28
0 (0)	0 (0)	9.8 (9.8)	0 (0)	—	—	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
14	13	12	11	10	9	8	7	6	5	4	3	2	1
10.3 (10.3)	10.3 (10.3)	—	—	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	9.8 (9.8)	0 (0)	0 (0)	10.2 (10.2)	9.3 (9.3)

IC908

16	0 (0)	1	9.0 (9.0)
15	0 (0)	2	0 (0)
14	0 (0)	3	0 (0)
13	9.5 (9.5)	4	6.0 (6.0)
12	9.5 (9.5)	5	—
11	—	6	0 (0)
10	0 (0)	7	—
9	9.8 (0)	8	9.0 (9.0)

IC909

14		1	0 (0)
13	0.4 (0.4)	2	—
12	9.5 (9.5)	3	—
11	0.4 (0.4)	4	—
10	0.4 (0.4)	5	6.6 (6.6)
9	6.6 (6.6)	6	0 (0)
8		7	0 (0)

IC906

1	2	3	4	5	6	7	8	9
9.5 (9.5)	11.8 (11.8)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	11.8 (11.8)	9.5 (9.5)

PG915

1	END LED
2	GND

To END LED
CN051

IC907

9	8	7	6	5	4	3	2	1
9.5 (9.5)	11.8 (11.8)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	11.8 (11.8)	9.5 (9.5)

PG916

1	DEW
2	10V

To DEW SENSOR
CN016

PG901

1	GND
2	S12V
3	S9.5V

To REGULATOR
PG1152

PG905

1	DOLBY NR
2	MUTE
3	A DUB

To AUDIO
PG405

PG912

1	12V
2	S REEL
3	GND

To SUPPLY REEL SENSOR
CN012

PG902

	B		A
1	MONITOR CUT	1	PAUSE
2	CTL IN	2	REC START
3	CLOCK	3	SLOW
4	CTL OUT	4	REVERSE
5	TRACKING	5	F. ADV
6	TRACKING	6	GND
7	SPEED PB	7	GND
8	REEL M (−)	8	LP
9	REEL M (+)	9	SP
10	REEL M (−) S	10	CYL LOCK
11	CYL ON	11	12V
12	SEARCH	12	PB
13	POWER CONTROL	13	REC

To
SERVO/REGULATOR
PG1150

PG923

1	SP IND
2	LP IND
3	LED 1 (180)
4	LED 2 (120)
5	LED 3 (90)
6	LED 4 (60)
7	LED 5 (30)
8	LED 6 (15)
9	LED 7 (5)
10	TAPE IN IND
11	PLAY IND

To
OPERATION SW
PG2022

PG913

1	12V
2	T. REEL
3	GND

To
TAKE UP REEL SENSOR
CN013

PG914

1	—
2	SAFETY
3	10V

To
SAFETY SW
CN014

PG918

1	GND
2	LOAD
3	UN LOAD

To
LOADING MOTOR
CN018

PG920

1	PICTURE CONTROL
2	GND
3	PICTURE CONTROL

To
Y/CHROMA
PG207

PG906

1	SAFTY
2	TIMER ON
3	TIMER SW
4	C. REVERSE
5	REC/PAUSE
6	S9.5V
7	REEL LOCK
8	MEMORY OUT
9	GND

To
TIMER
PG101

PG907

1	REWIND END
2	F. FWD END
3	FRONT LOAD END
4	FRONT LOAD END
5	FRONT UNLOAD END
6	S9.5V
7	UNLOADING
8	LOADING
9	GND

To
CONNECTOR
CN007

PG908

1	10V
2	TIMER SW
3	BACK UP
4	RESET
5	TIMER INDI
6	POWER INDI
7	POWER SW.

To
AUDIO
PG406

PG911

1	GND
2	REVERS
3	REC/PLAY
4	REC/PAVSE
5	FF/REW
6	STOP

To
MECHA STATE SENSOR SW
CN 011

PG921

1	TV/VTR
2	REMOTE
3	C. PAUSE
4	TUNER/LINE
5	GND

To
JACK
PG1704

PG922

1	FF IND
2	DUB IND
3	STOP IND
4	REW IND
5	GND
6	EJECT
7	LEDDER OUT

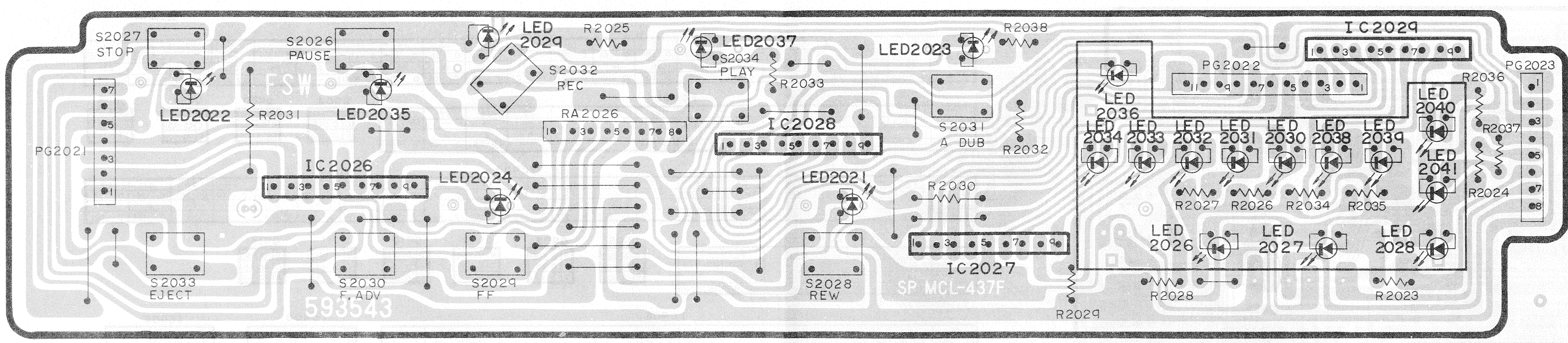
To
OPERATION SW
PG2021

PG924

8	VTR
7	TV IND
6	LINE IND
5	DOLBY IND
4	S9.5V
3	IND CONTROL
2	REC IND
1	PAUSE IND

To
OPERATION SW
PG 2023

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.


S2027 STOP
S2026 PAUSE
LED 2029
R2025
LED2037
S2034 PLAY
LED2023
R2038
IC2029
PG2023
LED2022
R2031
LED2035
S2032 REC
R2033
RA2026
IC2028
S2031 A DUB
R2032
PG2022
LED 2036
LED 2034
LED 2033
LED 2032
LED 2031
LED 2030
LED 2038
LED 2039
LED 2040
LED 2041
R2036
R2037
R2024
PG2021
IC2026
LED2024
LED2021
R2030
R2027
R2026
R2034
R2035
LED 2026
LED 2027
LED 2028
IC2027
S2033 EJECT
S2030 F. ADV
S2029 FF
S2028 REW
R2029
R2028
R2023
FSW
593543
SP MCL-437F

OPERATION SWITCH P.C.B.

IC2026

1	2	3	4	5	6	7	8	9
0(0)	0(0)	0(0)	0(0)	0(0)	3.1(3.1)	3.1(3.1)	3.1(3.1)	3.1(3.1)

IC2027

1	2	3	4	5	6	7	8	9
9.8(9.8)	9.8(9.8)	9.8(9.8)	9.8(9.8)	0(0)	0(0)	0(0)	0(0)	0(0)

IC2028

1	2	3	4	5	6	7	8	9
9.8(9.8)	9.8(9.8)	0(0)	9.8(9.8)	0(0)	0(0)	6.8(6.8)	0(0)	0(0)

IC2029

1	2	3	4	5	6	7	8	9
0(0)	9.8(9.8)	9.8(9.8)	9.8(9.8)	0(0)	0(0)	0(0)	0(0)	7.5(7.5)

※ VOLTAGES ARE MEASURED IN PLAY MODE, AND
VOLTAGES IN ( ) ARE MEASURED IN RECORED MODE.

PG2021

7	LADDER OUT
6	EJECT
5	GND
4	REW IND
3	STOP IND
2	DUB IND
1	FF IND

To
SYSTEM CONTROL
PG922

PG2022

1	SP IND
2	LP IND
3	LED 1 (180)
4	LED 2 (120)
5	LED 3 (90)
6	LED 4 (60)
7	LED 5 (30)
8	LED 6 (15)
9	LED 7 (5)
10	TAPE IN IND
11	PLAY IND

To
SYSTEM CONTROL
PG923

PG2023

1	PAUSE IND
2	REC IND
3	IND CONTROL
4	S9.5V
5	DOLBY IND
6	LINE IND
7	TV IND
8	VTR

To
SYSTEM CONTROL
PG924

REPLACEMENT PARTS LIST

SYMBOL-NO	P-NO	DESCRIPTION
		CAPACITORS
CT1201	5058414	TRIMER 20P
CT201	5058414	TRIMER 20P
C051-052	0256388	TANTALUM ELECTROLYTIC 10MF,10V
C627	0256473	TANTALUM 4.7 16V1
C639	0256473	TANTALUM 4.7 16V1
C904	0209027	CERAMIC (RESISTOR SHAPE) 0.01MF +-30%
C906	0209027	CERAMIC (RESISTOR SHAPE) 0.01MF +-30%
C908	0209027	CERAMIC (RESISTOR SHAPE) 0.01MF +-30%
C909	0208141	CERAMIC DISC (RESISTOR SHAPE) 100PF +-5%
C910-911	0209006	CERAMIC (RESISTOR SHAPE) 470PF+-10%
C912	0209027	CERAMIC (RESISTOR SHAPE) 0.01MF +-30%
C914	0208141	CERAMIC DISC (RESISTOR SHAPE) 100PF +-5%
C915	0209006	CERAMIC (RESISTOR SHAPE) 470PF+-10%
C916	0209027	CERAMIC (RESISTOR SHAPE) 0.01MF +-30%
C917	0208141	CERAMIC DISC (RESISTOR SHAPE) 100PF +-5%
C920	0208142	CERAMIC RESISTOR
C921	0209002	CERAMIC (RESISTOR SHAPE) 220PF+-10%
C922-931	0209027	CERAMIC (RESISTOR SHAPE) 0.01MF +-30%
R488	0149705	METAL FILM RESISTOR 470 OHM
		RESISTORS
RA2026	5378963	RESISTOR BLOCK R0704
RA601	5378953	RESISTOR BLOCK
RT1151	5007432	SEMI VARIABLE 1.0KOHM
RT1201	5007461	SEMI VARIABLE RESISTOR
RT1202	5007459	SEMI VARIABLE 2.2KOHM
RT1203	5007461	SEMI VARIABLE RESISTOR
RT1204	5007464	SEMI VARIABLE 47KOHM
RT1701	5007166	SEMI VARIABLE 22 KOHM
RT201	5007714	SEMI VARIABLE 4.7KOHM
RT202	5007712	SEMI VARIABLE 1KOHM
RT401	5007437	SEMI VARIABLE 47KOHM
RT404	5007491	SEMI VARIABLE 470KOHM
RT405	5007435	SEMI VARIABLE 10KOHM
RT406	5007435	SEMI VARIABLE 10KOHM
RT602-603	5007449	SEMI VARIABLE 47KOHM
RT604	5007446	SEMI VARIABLE RESISTOR 4.7KOHM
RT605	5007447	SEMI VARIABLE 10KOHM
RT606-607	5007451	SEMI VARIABLE 100KOHM
RT608	5007452	SEMI VARIABLE 220KOHM
RT611-612	5007447	SEMI VARIABLE 10KOHM
RT613-614	5007452	SEMI VARIABLE 220KOHM
RT615	5007491	SEMI VARIABLE 470KOHM
RT617	5007466	SEMI VARIABLE 220KOHM
RV901	5008824	VARIABLE RESISTOR 500KOHM
RV903	5008823	VARIABLE RESISTOR 10KOHM
R1770	0111153	METAL OXIDE 1KOHM 1W
R1771	0171034	METAL OXIDE FILM RESISTOR 820 OHM+-5% 1W
R1772	0170481	FUSE RESISTOR 22OHM+-5% 1/4W
R1791	0170481	FUSE RESISTOR 22OHM+-5% 1/4W
R453	0170481	FUSE RESISTOR 22OHM+-5% 1/4W
R978	0171262	METAL FILM RESISTOR
R980	0171265	METAL FILM RESISTOR 49.3KOHM
		SEMI-CONDUCTORS
DM91	5330573	DIODE IS2473
D101-103	5330131	DIODE 1S2076
D104	5331592	DIODE 1SS133
D106	5331592	DIODE 1SS133
D107-113	5330131	DIODE 1S2076
D114-117	5331592	DIODE 1SS133
D1151-1152	5331671	DIODE DS135D-FA3
D1153	5331592	DIODE 1SS133
D1154	5331511	DIODE DAN201
D1156	5331592	DIODE 1SS133
D1157-1158	5331592	DIODE 1SS133
D1159-1161	5331592	DIODE 1SS133
D119-121	5330131	DIODE 1S2076
D1201-1202	5330131	DIODE 1S2076
D123	5331592	DIODE 1SS133
D124	5330131	DIODE 1S2076
D1401-1404	5330131	DIODE 1S2076
D1406	5330131	DIODE 1S2076
D151-152	5331521	DIODE S4VB10
D153	5331921	DIODE S1WD
D155	5330101	RECTIFIER SILICON V06C 15K
D157-158	5330101	RECTIFIER SILICON V06C 15K
D1701-1702	5330131	DIODE 1S2076
D1703	5330573	DIODE 1S2473 (BS)
D1704	5330131	DIODE 1S2076
D1705	5330573	DIODE IS2473
D1707-1708	5330131	DIODE 1S2076
D1711	5330573	DIODE 1S2473
D1712	5330573	DIODE IS2473
D1787-1788	5330573	DIODE IS2473
D1789	5330573	DIODE IS2473

SYMBOL-NO	P-NO	DESCRIPTION
		SEMI-CONDUCTORS
D1792-1795	5330573	DIODE IS2473
D1796	5330101	RECTIFIER SILICON V06C 15K
D1798	5330573	DIODE IS2473
D1951-1952	5331592	DIODE 1SS133
D1953-1954	5380691	LED SLR34UR
D202-203	5331592	DIODE 1SS133
D2021-2022	5380691	LED SLR34UR
D2023	5380691	LED SLR34UR
D2024	5380691	LED SLR34UR
D2025	5380991	LED SLP-260C
D2026	5380721	LED SLR-54UR4 (E)
D2027	5380992	LED SLR-54YC4
D2028	5380991	LED SLP-260C
D2029	5380691	LED SLR34UR
D2030-2034	5380711	LED TLG-123A
D2035	5380691	LED SLR34UR
D2037	5380711	LED TLG123A
D2038-2039	5380711	LED TLG123A
D2040	5380721	LED SLR-54UR4
D2041	5380991	LED SLP-260C
D205	5330131	DIODE 1S2076
D206	5331592	DIODE 1SS133
D207-209	5331592	DIODE 1SS133
D351	5330131	DIODE 1S2076 (E)
D354	5331592	DIODE 1SS133 (E)
D401	5330131	DIODE 1S2076
D402	5331511	DIODE DAN201
D403-405	5330131	DIODE 1S2076
D406-407	5331511	DIODE DAN201
D408-409	5330131	DIODE 1S2076
D451	5340205	VARISTOR VD1221
D452	5331592	DIODE 1SS133
D601-602	5331592	DIODE 1SS133
D604-606	5331592	DIODE 1SS133
D607	5331511	DIODE DAN201
D609	5331511	DIODE DAN201
D610-614	5331592	DIODE 1SS133
D617	5331592	DIODE 1SS133
D618	5331511	DIODE DAN201
D619-623	5331592	DIODE 1SS133
D625	5331592	DIODE 1SS133
D626	5331592	DIODE 1SS133
D628	5331592	DIODE 1SS133
D631-633	5331511	DIODE DAN201

SYMBOL-NO	P-NO	DESCRIPTION
D634	5331592	DIODE 1SS133
D636	5331511	DIODE DAN201
D638-639	5331592	DIODE 1SS133
D640	5331592	DIODE 1SS133
D642 D647 D690	5331592	DIODE 1SS133
D672	5331592	DIODE 1SS133
D711A-711H	5330131	DIODE 1S2076
D711I-P	5330131	DIODE 1S2076 (E)
D712A-P	5330131	DIODE 1S2076 (E)
D713	5330131	DIODE 1S2076
D721-724	5330131	DIODE 1S2076
D901-902	5331671	DIODE DS135D-FA3
D903	5331592	DIODE 1SS133
D905-906	5331511	DIODE DAN201
D907	5331592	DIODE 1SS133
D909-911	5331592	DIODE 1SS133
D915	5331592	DIODE 1SS133
D917-920	5331592	DIODE 1SS133
D921-922	5331511	DIODE DAN201
D923-927	5331592	DIODE 1SS133
D931-937	5331592	DIODE 1SS133
IC051	5355261	IC MPC1373H
IC101	5369882	IC M-58839-606P
IC102	5365491	IC HD14
IC1151	5369171	IC M54543L
IC1152	5369181	IC M5218L
IC1153	5355241	IC NJD6506S
IC1154	5353491	IC EXB341
IC1201	5368321	IC BA-7022
IC1202	5368311	IC LA-7808
IC1203	5369431	IC LA7016
IC1204	5359501	IC MPD4011C
IC1205	5359501	IC MPD4011C
IC1206	5365601	IC MPD4013C
IC1207	5355241	IC NJD6506S
IC1402	5355231	IC M50127AP
IC1403	5359631	IC MPD4081
IC1404	5365441	IC MPD4069C
IC1405	5369101	IC MPD4514BC
IC1406	5369101	IC MPD4514BC
IC1407	5375921	IC TA4350
IC141	5391032	HOLEIC DN6838A
IC142	5391032	HOLEIC DN6838A
IC1701	5368161	IC BA7026 (E)
IC1702	5359901	IC UPD4066C

SYMBOL-NO	P-NO	DESCRIPTION
		SEMI-CONDUCTORS
IC1703	5369431	IC LA7016
IC201	5358611	MODULE HT4207
IC202	5376581	IC HT-4238
IC2026	5355241	IC NJD6506S
IC2027	5355241	IC NJD6506S
IC2028	5355241	IC NJD6506S
IC2029	5355241	IC NJD6506S
IC203	5376591	IC HT-4239
IC204	5368081	IC M51454L
IC351	5355461	IC BA7100 (E)
IC401	5350251	IC HA1406
IC402	5359901	IC UPD4066C
IC403	5352691	IC TA7629
IC481	5355451	IC HA13402
IC601	5350961	IC BA340
IC602	5355492	IC HA11747A
IC603-604	5355501	IC HA11749
IC605	5355941	IC HA11750
IC606-607	5355241	IC NJD6506S
IC721	5351722	IC MPC1363C
IC901	5369325	IC HD38800B12
IC902	5365583	IC HD38702A25
IC903	5369323	IC HD38800B03
IC904	5369252	IC BA6304A
IC905	5365983	IC HD38757A11
IC906-907	5369171	IC M54543L
IC908	5363011	IC HA11768
IC909	5355251	IC NJD6508D
QM91	5320614	TRANSISTOR 2SC1213D
Q101	5321663	TRANSISTOR 2SC2021R/S
Q104	5321663	TRANSISTOR 2SC2021R/S
Q1151	5323331	TRANSISTOR 2SB772-Q
Q1152-1155	5323421	TRANSISTOR 2SD1276
Q1156	5321663	TRANSISTOR 2SC2021R/S
Q1158	5323332	TRANSISTOR 2SD882-Q
Q1201-1204	5321662	TRANSISTOR 2SC2021S
Q1205	5320593	TRANSISTOR 2SA673C
Q1206-1207	5321662	TRANSISTOR 2SC2021S
Q1208	5320593	TRANSISTOR 2SA673C
Q1209-1210	5321662	TRANSISTOR 2SC2021S
Q1211-1212	5321662	TRANSISTOR 2SC2021S
Q1214	5321662	TRANSISTOR 2SC2021S
Q141-142	5380131	PHOTO TRANSISTOR
Q1410	5321252	2SA844D
Q1701	5321663	TRANSISTOR 2SC2021R/S (BS)
Q1702	5321663	TRANSISTOR 2SC2021R/S
Q1703	5321252	2SA844D
Q1704	5321663	TRANSISTOR 2SC2021R/S
Q1707	5321663	TRANSISTOR 2SC2021R/S (E)
Q1708	5321663	TRANSISTOR 2SC2021R/S (E)
Q1709	5320613	TRANSISTOR 2SC1213C (E)
Q1710	5322802	TRANSISTOR 2SA934Q (E)
Q1711	5322732	TRANSISTOR 2SA952ML2 (E)
Q1712	5321663	TRANSISTOR 2SC2021R/S (E)
Q1791-1792	5321663	TRANSISTOR 2SC2021R/S
Q1793	5321663	TRANSISTOR 2SC2021R/S
Q1795-1796	5322623	TRANSISTOR 2SC2320EF
Q1797	5320593	TRANSISTOR 2SA673C
Q1798	5321663	TRANSISTOR 2SC2021R/S
Q201-202	5321662	TRANSISTOR 2SC2021S
Q205-211	5321662	TRANSISTOR 2SC2021S
Q212	5321252	2SA844D
Q213	5321662	TRANSISTOR 2SC2021S
Q214-215	5321252	2SA844D
Q217-218	5321662	TRANSISTOR 2SC2021S
Q220-222	5321662	TRANSISTOR 2SC2021S
Q225-227	5321662	TRANSISTOR 2SC2021S
Q228	5321252	2SA844D
Q229-230	5321662	TRANSISTOR 2SC2021S
Q234-235	5321662	TRANSISTOR 2SC2021S (BS)
Q353-355	5321662	TRANSISTOR 2SC2021S (E)
Q356-357	5321252	2SA844D (E)
Q401-410	5321663	TRANSISTOR 2SC2021R/S
Q412-418	5321663	TRANSISTOR 2SC2021R/S
Q420	5321663	TRANSISTOR 2SC2021R/S
Q481-482	5321662	TRANSISTOR 2SC2021S
Q601	5322892	TRANSISTOR 2SA1198RS
Q603	5321663	TRANSISTOR 2SC2021R/S
Q605-606	5322892	TRANSISTOR 2SA1198RS
Q612	5321663	TRANSISTOR 2SC2021R/S
Q613-617	5321663	TRANSISTOR 2SC2021R/S
Q690	5323561	TRANSISTOR DTC124F
Q712	5321663	TRANSISTOR 2SC2021R/S
Q722	5321663	TRANSISTOR 2SC2021RS
Q724	5320603	TRANSISTOR SILICON 2SA673A-C 80MHZ 400MW
Q725-727	5320603	TRANSISTOR SILICON 2SA673A-C 80MHZ 400MW (E)
Q728	5320623	TRANSISTOR SILICON 2SC1213A-C 80MHZ 400M
Q733	5320603	TRANSISTOR SILICON 2SA673A-C 80MHZ 400MW
Q902-904	5321663	TRANSISTOR 2SC2021R/S

SYMBOL-NO	P-NO	DESCRIPTION
		SEMI-CONDUCTORS
Q905-906	5321663	TRANSISTOR 2SC2021R/S
Q908-910	5321663	TRANSISTOR 2SC2021R/S
Q911	5321252	2SA844D
Q912-914	5321663	TRANSISTOR 2SC2021R/S
ZD101	5331264	ZENER DIODE HZ7-B3L
ZD1151	5330535	DIODE HZ-9A2
ZD1152	5331271	DIODE HZ18-3
ZD1153	5330393	ZENER DIODE SILICON HZ6C 1MHZ
ZD1154	5330535	DIODE HZ-9A2
ZD1155	5330329	ZENNER DIODE HZ9C2
ZD1156	5330391	DIODE-ZENER SILICON
ZD1201	5330392	ZENER DIODE SILICON HZ6B 1MHZ 400MW
ZD1791	5331014	ZENNER DIODE HZ5A
ZD1792	5330553	DIODE HZ11C
ZD1794	5330552	ZENNER DIODE HZ11B
ZD1795	5330552	ZENNER DIODE HZ11B
ZD1796	5330553	DIODE HZ11C
ZD1797	5330552	ZENNER DIODE HZ11B
ZD481	5330713	DIODE HZ-3B
ZD601	5330396	ZENNER DIODE HZ-6A1
ZD721	5350611	IC UPC574J
ZD901	5330325	DIODE HZ9A2
		COILS
L051	5120567	TRAP COIL
L101	5152087	CHOKE COIL 100UH+-10%
L1201-1203	5152346	CHOKE COIL 470UH+-10%
L1204-1205	5152326	CHOKE COIL 15UH+-10%
L1206	5152332	CHOKE COIL 39UH+-10%
L1207-1209	5152346	CHOKE COIL 470UH+-10%
L1212	5152317	CHOKE COIL 3.3UH
L1213	5152346	CHOKE COIL 470UH+-10%
L1214	5152338	CHOKE COIL 120UH+-10%
L151	5152561	CHOKE COIL 68UH+-10%
L1701	5152346	CHOKE COIL 470UH+-10% (E)
L1702	5152346	CHOKE COIL 470UH+-10% (BS)
L1703-1704	5152346	CHOKE COIL 470UH+-10%
L1705	5152334	CHOKE COIL 56UH+-10%
L1706	5152346	CHOKE COIL 470UH+-10%
L1707	5152346	CHOKE COIL 470UH+-10% (E)
L1708	5152337	CHOKE COIL 100UH+-10%
L201	5152324	CHOKE COIL 10UH+-10%
L202	5152342	CHOKE COIL 220UH+-10%
L203	5152332	CHOKE COIL 39UH+-10%
L204	5152336	CHOKE COIL 82UH+-10%
L205	5152337	CHOKE COIL 100UH+-10%
L206	5152346	CHOKE COIL 470UH+-10%
L207	5152337	CHOKE COIL 100UH+-10%
L208	5152334	CHOKE COIL 56UH+-10%
L209-210	5152346	CHOKE COIL 470UH+-10%
L211	5152342	CHOKE COIL 220UH+-10%
L213	5152333	CHOKE COIL 47UH+-10%
L214	5152098	CHOKE COIL 680MICROH
L215-216	5152342	CHOKE COIL 220UH+-10%
L217	5152349	CHOKE COIL 820MH
L218	5152339	CHOKE COIL 150UH+-10%
L219	5152342	CHOKE COIL 220UH+-10%
L220	5152324	CHOKE COIL 10UH+-10%
L221	5152332	CHOKE COIL 39UH+-10%
L222-223	5152323	CHOKE COIL 8.2UH+-10%
L224	5152346	CHOKE COIL 470UH+-10%
L225	5152337	CHOKE COIL 100UH+-10%
L226	5152336	CHOKE COIL 82UH+-10%
L230	5152324	CHOKE COIL 10UH+-10%
L352	5150577	CHOCK COIL 12MH (E)
L353	5152344	CHOKE COIL 330MICRO H (E)
L354	5150366	CHOKE COIL 15 MH (E)
L355	5152329	CHOKE COIL 27 MICROH (E)
L401	5162282	FILTER BLOCK
L402	5152349	CHOKE COIL 820MH
L403	5260215	TRAP COIL 33HH
L404	5150366	CHOKE COIL 15 MH
L406	5150573	CHOKE COIL
L601	5152337	CHOKE COIL 100UH+-10%
		CRYSTALS
CE1401	5780671	CERAMIC OSCILLATOR 455 KHZ
X101	5780504	XTAL
X1201	5780421	CRYSTAL 10.240MHZ
X201	5780534	CRYSTAL 4.435572MHZ
		MISCELLANEOUS
	5602091	MAIN SWITCH
	5722131	1P FUSE HOLDER
	5722211	FUSE HOLDER
	6773211	SWITCH COVER
	6864043	BATTERY CASE
	6866132	HOLE IC HOLDER
	6871851	HOLDER(HOLE IC)
B101	5060041	CR PACK
CE0901	5780634	XTAL
CP1201	5785341	DELAY LINE

SYMBOL-NO	P-NO	DESCRIPTION
		MISCELLANEOUS
CP1202	5785332	DELAY LINE
CP201	5162332	LOW PASS FILTER
CP202	5162334	HIGH PASS FILTER
CP203	5123833	COIL
CP204	5785321	DELAY LINE
CP205	5162345	LOW PASS FILTER
CP206	5162344	DELAY LINE
CP207	5785221	2H DELAY LINE
CP208	5161902	BAND PASS FILTER
CP209	5162346	LOW PASS FILTER
CP210	5161974	BAND PASS FILTER
CP211	5162345	LOW PASS FILTER
CP212	5162344	DELAY LINE
CP401	5260892	OSC BLOCK
FU151-152	5721064	FUSE 2.5A
J401	5674461	JACK
PD051	5380892	PHOT. DIODE PH302
PH1151	0249795	POTHISTOR
PV701	5008921	PRESET CHANNEL RESISTOR (BS)
PV701	5008927	PRESET CHANNEL RESISTOR (E)
RC1795	5260951	D-D CONVERTER
RLM91	5641541	RELAY
RL401-402	5641413	RELAY
R992	0249794	POSITIVE THERMISTOR
S101	5624454	SLIDE SWITCH
S102-104	5633784	SWITCH
S106-109	5633784	SWITCH
S110	5635031	PUSH SWITCH
S111-116	5633961	PUSH SWITCH
S117	5633784	SWITCH
S141	5633991	PUSH SWITCH
S1951-1952	5633311	PUSH SWITCH
S201	5622462	SLIDE SWITCH
S2026-2029	5633911	SWITCH
S2030	5633911	SWITCH
S2031-2034	5633911	SWITCH
S712	5635041	PUSH SWITCH
S902-904	5633311	PUSH SWITCH
S901	5624442	PUSH SWITCH (E)
		FOR FINAL ASSEMBLY
101	6046215	TOP CASE (BS)
101	6046216	TOP CASE (E)
102	6875581	CH DOOR ASSEMBLY
103	7380835	BOTTOM COVER
104	7740662	FELT-LEG
106	6020321	BEAR CASE (E)(BS)
107	6875591	CH DOOR GUIDE
107	6875592	CH DOOR GUIDE
108	6058593	POWER BUTTON (E)
108	6058595	POWER BUTTON (BS)
109	6058603	TIMER BUTTON (E)
109	6058605	TIMER BUTTON (BS)
110	6058233	KNOB (TRACKING/PICTURE)
111	6235155	FRONT PANEL ASSEMBLY (BS)
111	6235152	FRONT PANEL ASSEMBLY (E)
113	6058221	SLIDE KNOB (VTR/TV) (E)
114	6058242	PUSH BUTTON
115	6058211	BUTTON HOLDER
116	6520992	SPRING
117	6058711	BUTTON (PROG./ON.OFF/DAY)
118	6058831	BUTTON(RESET) (E)
118	6058832	BUTTON(RESET) (BS)
119	6058971	BUTTON(IRT)
120	6864241	CAP
121	6871065	MIC JACK HOLDER
122	6872401	LED HOLDER
125	5585896	VTR FRONT END (BS)
125	5585901	VTR FRONTEND (E)
126	5585702	RF CONVERTER (E)
126	5585727	RF CONVERTOR (BS)
127	5213352	POWER TRANSFORMER (E)
127	5213353	POWER TRANSFORMER (BS)
128	6794091	BUSHING
129	5746157	POWER CORD (E)
129	5746342	POWER CORD (BS)
131	6174563	JACK PLATE DOOR (E)
131	6174566	JACK PLATE DOOR (BS)
132	5310941	TIMER DISPLAY
133	6872391	HOLDER(TIMER DISPLAY)
137	6871043	RF HOLDER
143	6864951	I.R RECEIVER COVER
139	6863331	P.C.B GUIDE
144	7758592	INSULATION SHEAT
140	5672701	JACK PLATE (E)
140	5672702	JACK PLATE (BS)
141	6872381	COVER(TIMER DISPLAY)
142	6871091	IR RECE1VER CAP
150	6058721	BUTTON (DIM) (E)
150	6058722	BUTTON (DIM) (BS)

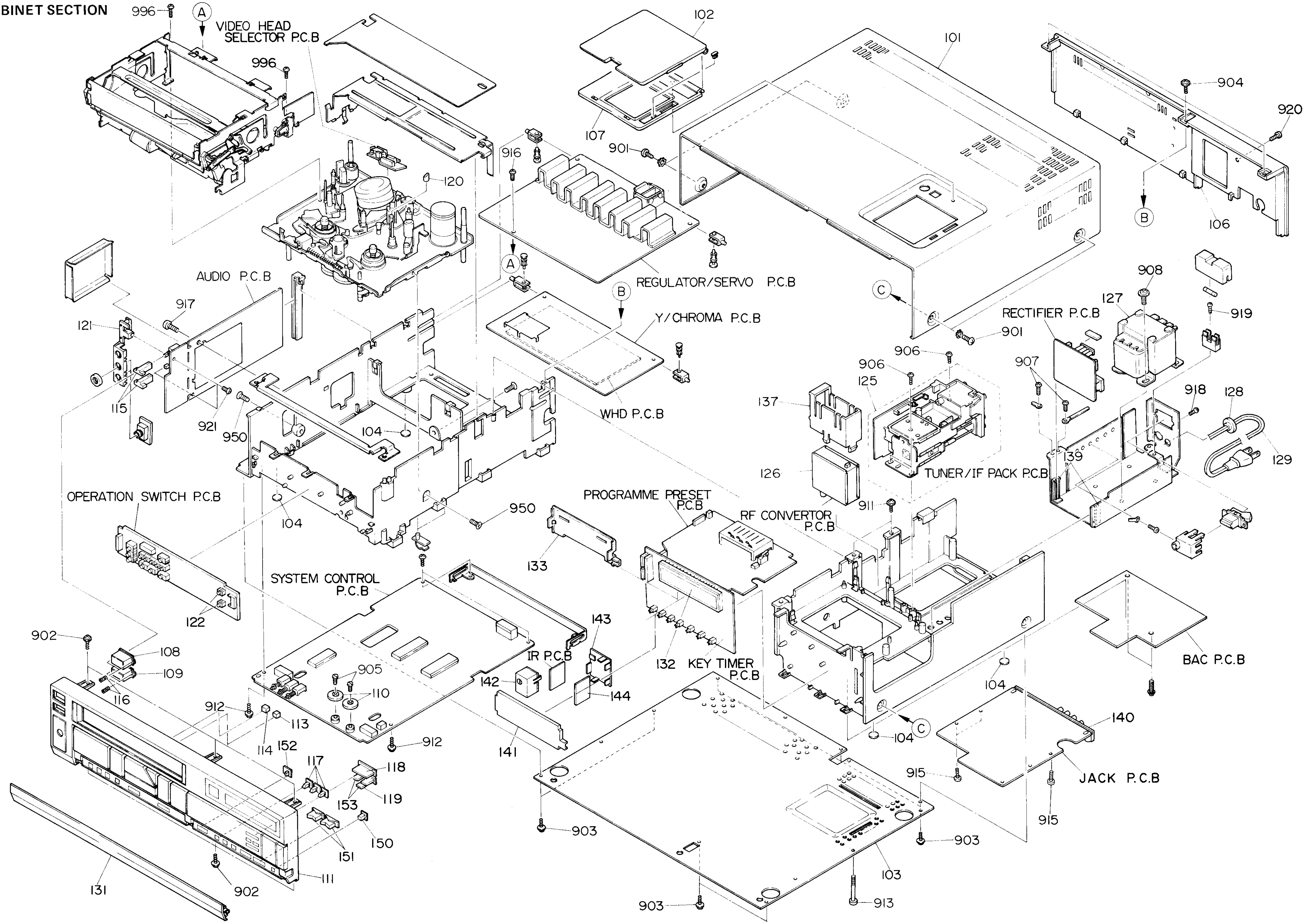
SYMBOL-NO	P-NO	DESCRIPTION
		FOR FINAL ASSEMBLY
151	6058761	BUTTON(HOUR/MINUTE)
152	6058841	BUTTON(MODE)
153	6058731	BUTTON(COUNTER/MEMORY) (E)
153	6058732	BUTTON(COUNTER/MEMORY) (BS)
202	6414653	SPPLY REEL TABLE ASSEMBLY
203	6414673	TAKE.UP REEL ASSEMBLY
204	6865761	RETAINER
205	7787032	THRUST SUPPORTER
206	7787412	WASHER
207	7778859	POLYSLIDER WASHER
208	6865662	BRAKE ARM
209	7375763	TENSION ARM ASSEMBLY
210	6865804	BRAKE L
211	6865811	BRAKE R
212	6302471	SPRING
213	6302083	SPRING
214	7376271	TENSION BAND
215	7382011	SPRING HOLDER
216	7379782	ARM BRAKET ASSEMBLY
217	6865575	F.F/PEW ARM ASSEMBLY
218	7376303	LOADING LINK R ASSEMBLY
219	7376313	LOADING LINK L ASSEMBLY
220	6977584	GUIDE ROLLER BASE (IN)
221	6977582	GUIDE ROLLER BASE (TAKE-UP)
222	6977481	INCLINED GUIDE (SUPPLY)
223	6977491	INCLINED GUIDE (TAKE-UP)
224	6344252	GUIDE ROLLER SHAFT
225	6868061	GUIDE ROLLER ASSEMBLY (OUT)
226	7376174	GUIDE BACE HOLDER
227	6977561	CATCHER (SUPPLY)
228	6977571	CATCHER (TAKE-UP)
229	7553841	TAPE GUIDE
230	6304903	SPRING
231	6866113	IMPEDANCE ARM
232	5448791	FULL ERASE HEAD
233	6302391	SPRING
234	5448762	AC HEAD
235	6304901	SPRING
236	7786245	WASHER
237	6865722	SUB BRAKE
238	6300084	SPRING
239	5577358	CAPSTAN MOTOR ASSEMBLY
240	6865674	RECORDING PREVENTION ARM
241	5633971	SWITCH (S141)
242	7788143	POLYSLIDER WASHER

SYMBOL-NO	P-NO	DESCRIPTION
243	6977821	PRESSURE ROLLER ARM
244	6383762	PRESSURE ROLLER
246	6547811	SPRING
247	7549271	X-ADJUST SCREW
248	5625091	SLIDE SWITCH
263	8821114	3D NUT
301	7375446	CLUTCH PLATE ASSEMBLY
302	6355561	BELT
303	7379663	BRAKE SLIDER
304	6865731	SLIDER
305	6547821	SPRING
306	6866297	LORDING GEAR ASSEMBLY
307	6865791	TENTION ARM
310	5372631	DEW SENSOR
311	7376352	LARDING MOTOR ASSEMBLY
312	6355601	BELT
313	6355591	BELT
314	6977431	FLYWHEEL
315	7788142	POLYSLIDER WASHER (THRUST)
316	7788148	WASHER
317	6357531	BELT
318	6355581	BELT
319	7376323	FLYWHEEL HOLDER
320	6869291	PULLEY
321	7778659	POLYSLIDER WASHER
322	6355561	BELT
323	0249797	HEATER
401	7091095	FRONT LOADING MECHA.ASSEMBLY
402	7395225	FRONT CHASSIS ASSEMBLY
403	7382242	MOTOR BLOCK ASSEMBLY
404	7395232	SIDE CHASSIS(R)ASSEMBLY
405	7395241	SIDE CHASSIS(L)ASSEMBLY
406	7381933	CASSETTE HOLDER ASSEMBLY
407	7380811	CASSETTE FLOOR
408	7382821	CHASSIS ROOF
409	6870991	UNDER GUIDE
410	6870831	HOLDER(END SENSER R)
411	6870821	HOLDER(END SENSER L)
412	7380774	CASSETTE DOOR (BS)
412	6644155	CASSETTE DOOR (E)
413	7557231	SHAFT
414	6548871	DOOR SPRING
501	5458434	UPPER CYLINDER
502	5458428	LOWER CYLINDER ASSEMBLY
503	5792131	BRUSH
504	5792091	STATOR

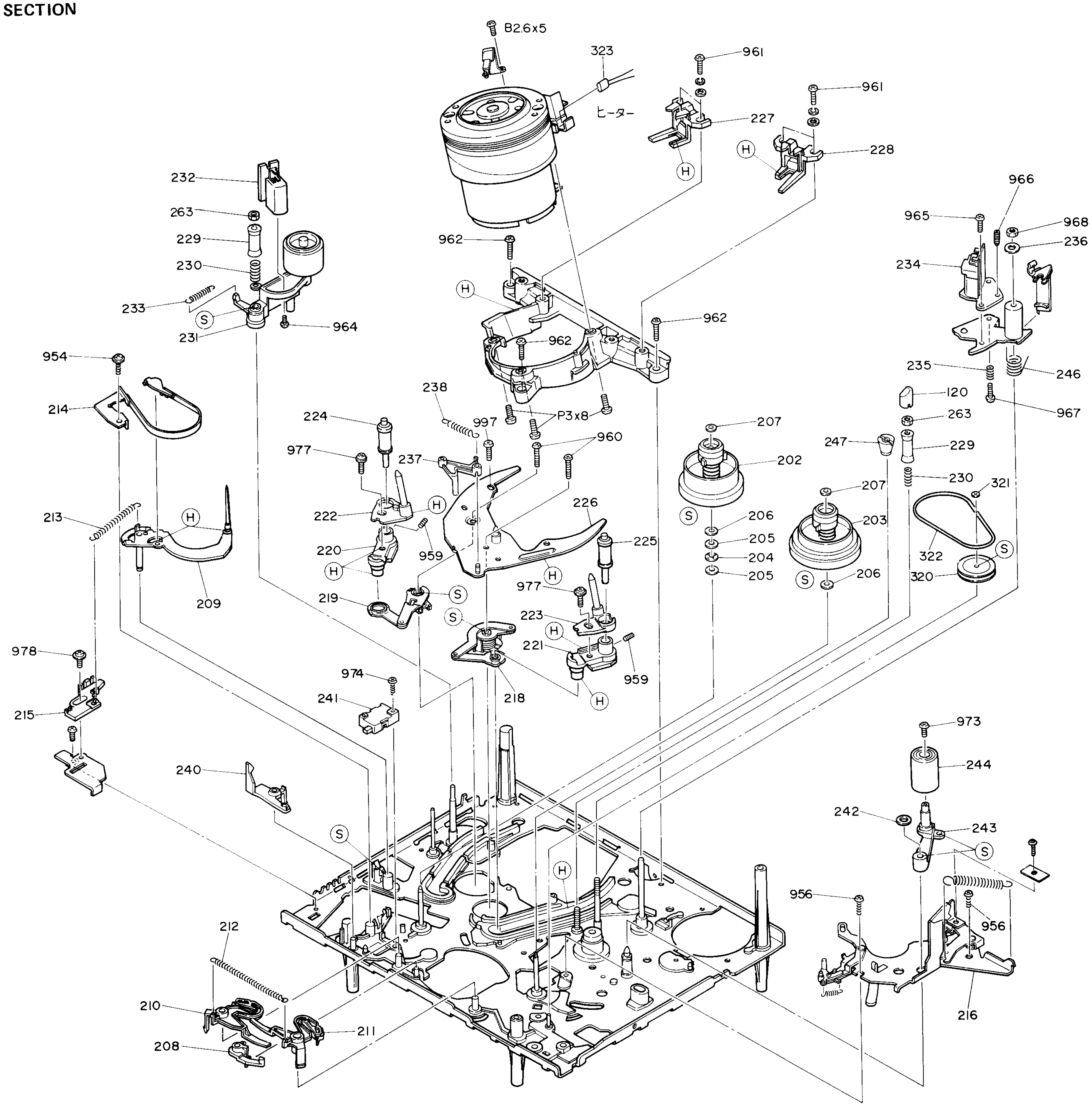
SYMBOL-NO	P-NO	DESCRIPTION
		FOR FINAL ASSEMBLY
505	5772601	ROTOR ASSEMBLY
506	5792211	WIRE HOLDER
507	5994731	CYL.FG PC BOARD
901	7783071	SPECIAL SCREW(M4X10)
902	7781131	B TIGHTING SCREW-3MMDX12MM
903	7781138	SCREW(3X10BT)
904	8699412	BIND TAPPING SCREW-3MMDX12MM(BLACK)
905	7777672	PAN HEAD SCREW
906	8691408	BIND TAPPING SCREW-3MMDX8MM (BLACK)
907	8691408	BIND TAPPING SCREW-3MMDX8MM (BLACK)
908	8660606	4X6 PW SCREW
911	7781135	BIND TAPPING-3MMD•14
912	7781138	SCREW(3X10BT)
913	7781149	TAPPING SCREW-3MMDX35MM
915	8699408	BT BIND HEAD SCREW-3MMDX8MM (BLACK)
916	8661406	SCREW(3X6PW)
917	7781138	SCREW(3X10BT)
917	8678408	SCREW 3X8DT
918	8671408	DT BIND SCREW-3MMDX8MM
918	8691408	BIND TAPPING SCREW-3MMDX8MM (BLACK)
919	8711408	SCREW-3MMD X 8MM SCREW
950	7541393	SCREW
951	8691408	BIND TAPPING SCREW-3MMDX8MM (BLACK)
952	8741408	SCREW (B3X8)
953	8691408	BIND TAPPING SCREW-3MMDX8MM (BLACK)
954	7781133	BT SCREW-3MMD
955	8691408	BIND TAPPING SCREW-3MMDX8MM (BLACK)
956	8691408	BIND TAPPING SCREW-3MMDX8MM (BLACK)
959	7773083	SCREW
960	8741408	SCREW (B3X8)
961	7782761	SCREW(B3X8 WITH S.WASHER)
964	8741103	SCREW(2X3B)
965	7781872	SCREW-3MMDX8MM
966	7773086	SCREW
967	8741414	BINDING SCREW - 3MMD X 14MM
968	8821114	3D NUT
969	8741408	SCREW (B3X8)
970	8691408	BIND TAPPING SCREW-3MMDX8MM (BLACK)
971	8691408	BIND TAPPING SCREW-3MMDX8MM (BLACK)
972	8691312	BT BIND SCREW-2.6MMDX12MM
973	0741304	BIND SCREW-2.6MMDX4MM
977	8651408	SCREW WITH WASHER
978	8660306	SCREW (2.6X6PW)
984	0741304	BIND SCREW-2.6MMDX4MM
985	8741404	BIND SCREW-3MMDX4MM
986	0741304	BIND SCREW-2.6MMDX4MM
987	0744304	SCREW-2.6MMDX4MM
988	8691410	BT BIND SCREW-3MMDX10MM
990	0744304	SCREW-2.6MMDX4MM
991	0741304	BIND SCREW-2.6MMDX4MM
992	0741308	BIND SCREW-2.6MMDX8MM
993	0741305	SCREW(2.6X5B)
994	8741108	BINDSREW-2MMDX8MM
995	0741303	BIND SCREW-2.6MMDX3MM
996	8741408	SCREW (B3X8)
997	7782781	SCREW 3X8BT
		FOR ACCESSARIES
	5639791	WIRELESS REMOTO CONTROL BOX (E)
	5639793	WIRELESS REMOTO CONTROL BOX (BS)
	5746623	CABLE (BS)
	5898876	CONNECTER CORD (E)

EXPLODED VIEWS

CABINET SECTION


996
A
VIDEO HEAD SELECTOR P.C.B
996
102
101
904
920
107
901
916
120
B
106
A
REGULATOR/SERVO P.C.B
B
Y/CHROMA P.C.B
C
901
908
127
919
RECTIFIER P.C.B
AUDIO P.C.B
917
121
115
921
950
104
WHD P.C.B
906
906
125
907
918
128
137
129
TUNER/IF PACK P.C.B
139
126
OPERATION SWITCH P.C.B
104
950
PROGRAMME PRESET P.C.B
RF CONVERTOR P.C.B
911
133
SYSTEM CONTROL P.C.B
122
143
902
108
109
116
IR P.C.B
142
905
110
132
KEY TIMER P.C.B
144
BAC P.C.B
104
912
113
114
152
912
141
C
104
140
117
118
153
119
915
JACK P.C.B
150
151
903
915
903
111
131
902
103
903
913

CHASSIS SECTION


B2.6x5
323
961
ヒーター
227
961
228
H
H
232
263
229
230
233
S
231
964
962
H
962
962
965
966
968
236
234
235
246
120
967
263
229
230
247
954
214
238
224
997
P3x8
960
977
237
222
H
213
H
209
220
H
959
226
225
207
202
S
206
205
204
205
207
203
S
206
321
322
320
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219
S
S
977
223
H
221
959
H
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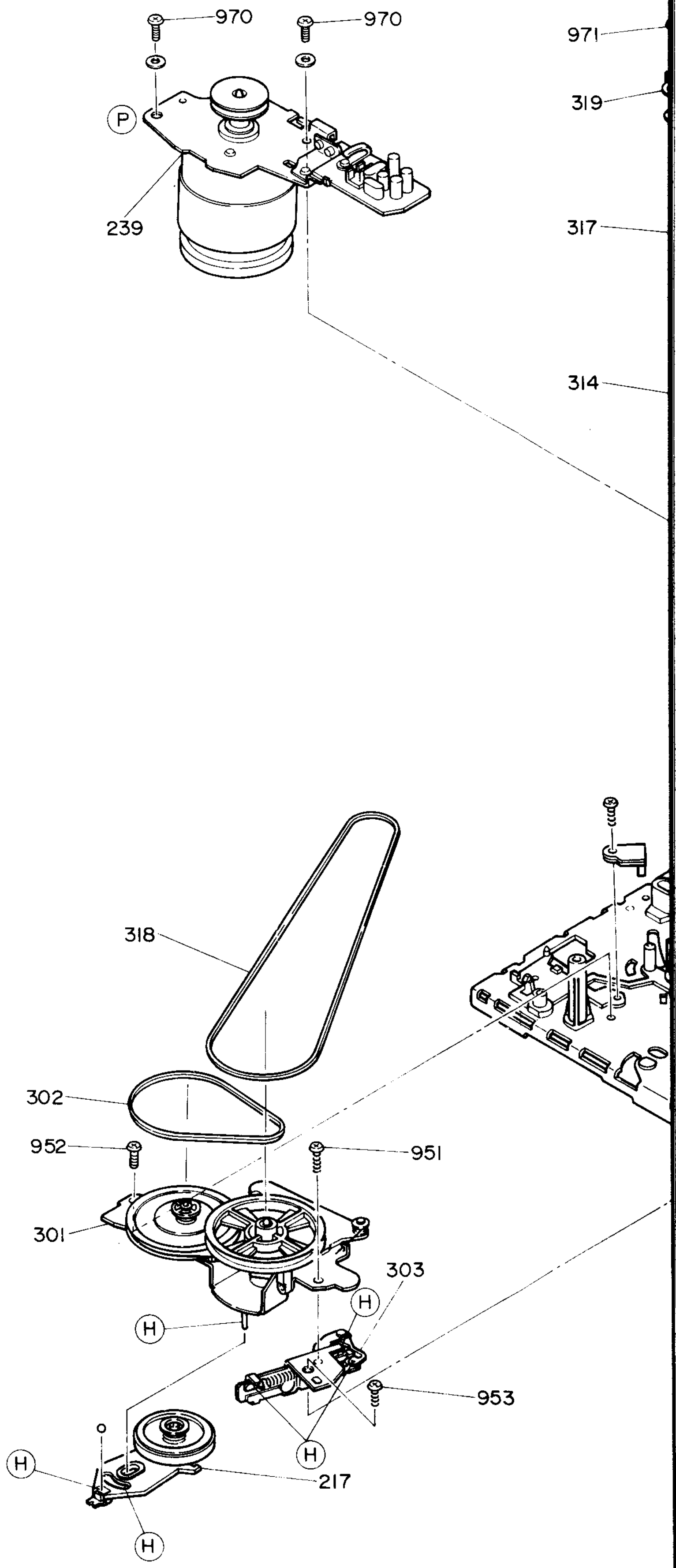
216


970
970
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P
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314
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302
952
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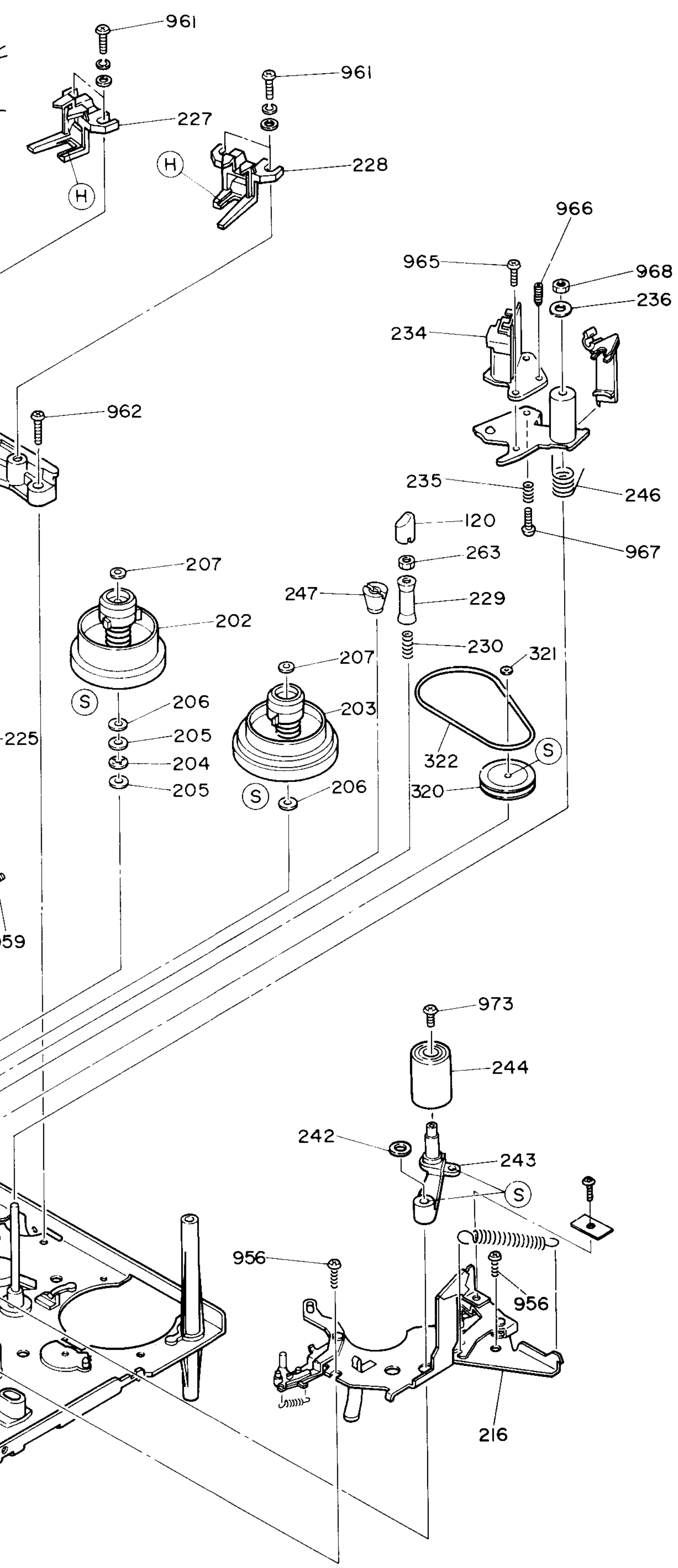
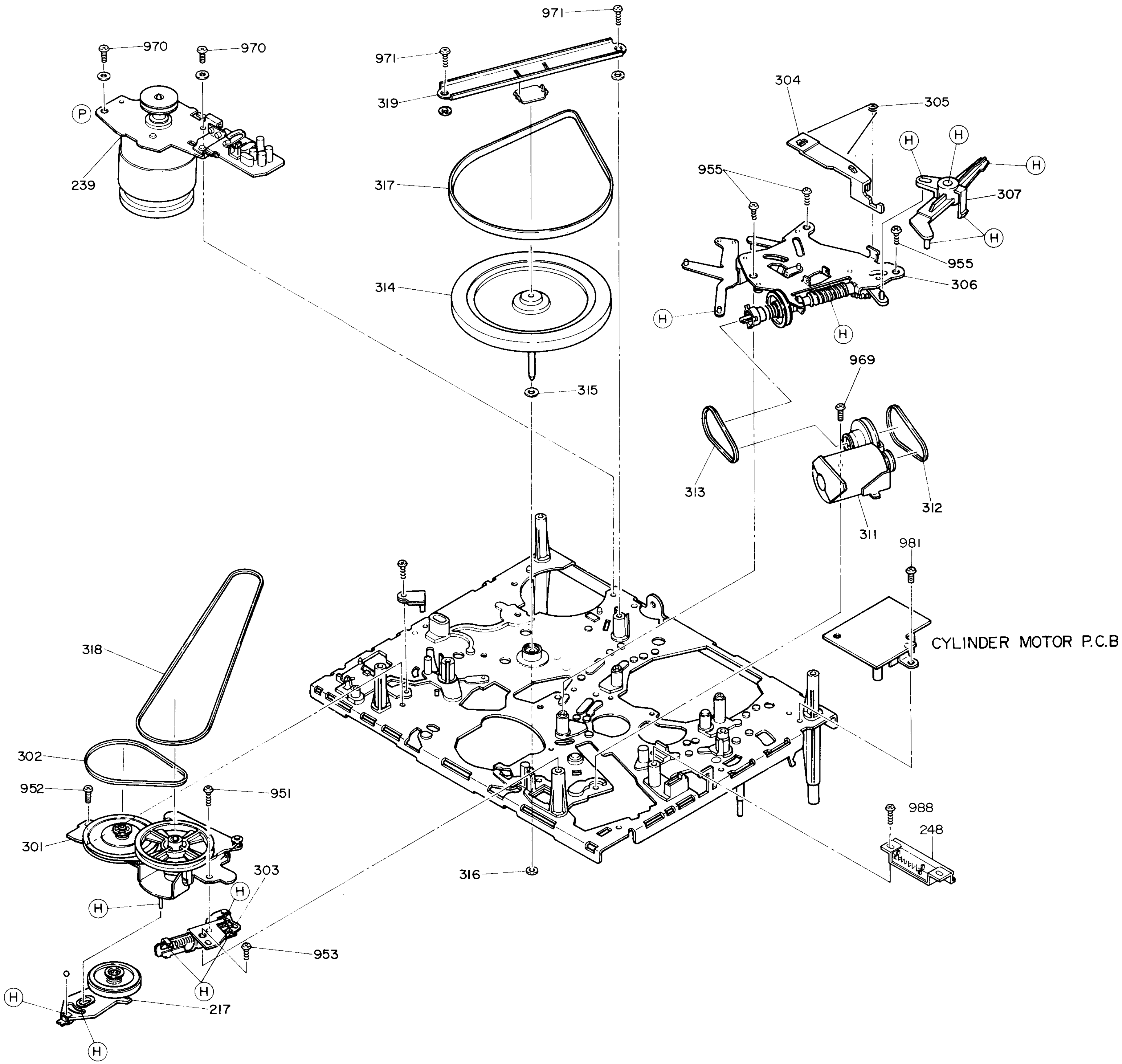
301
303
H
H
953
H
H
217
H

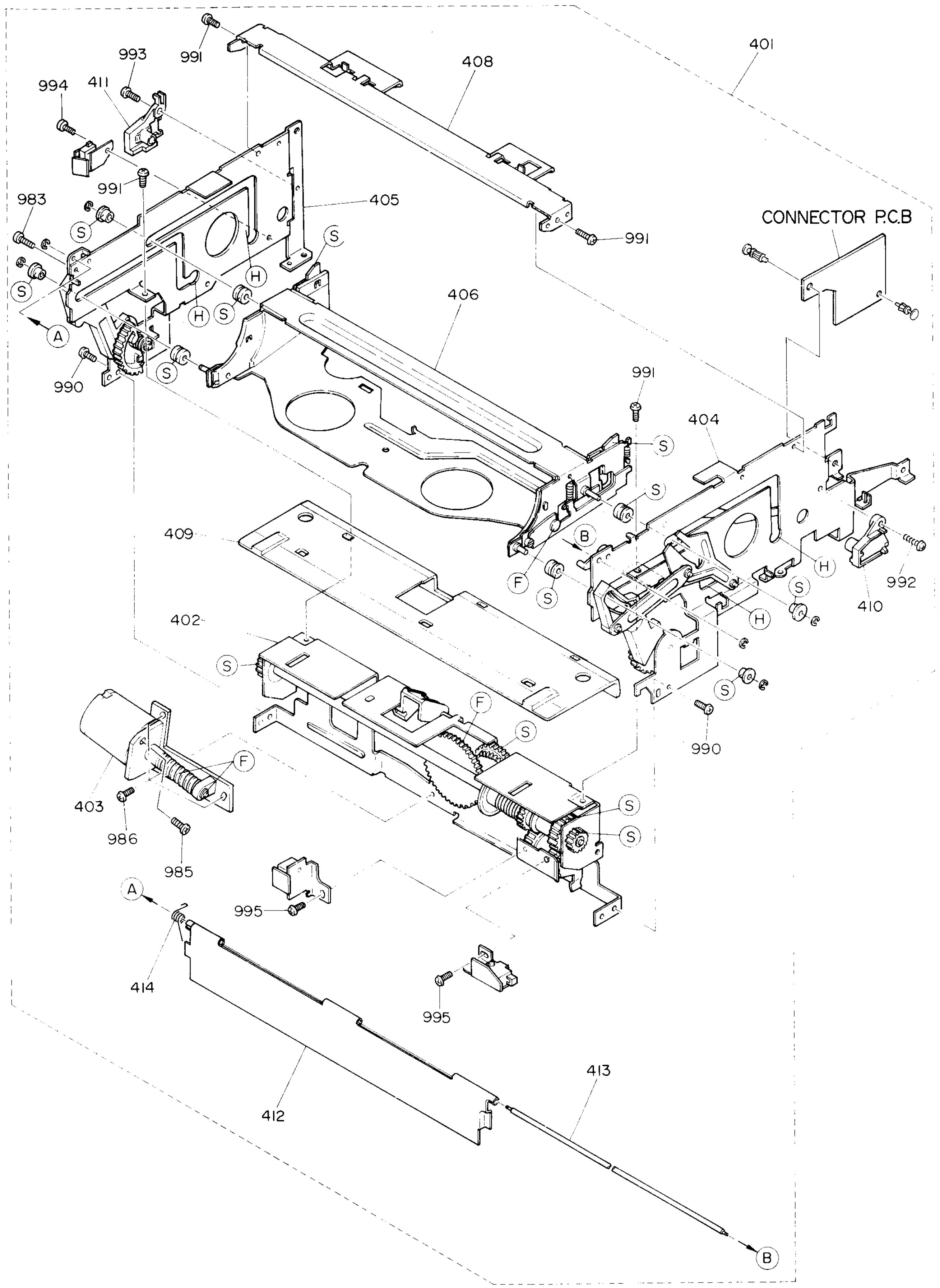


H
H
S
S
S
S

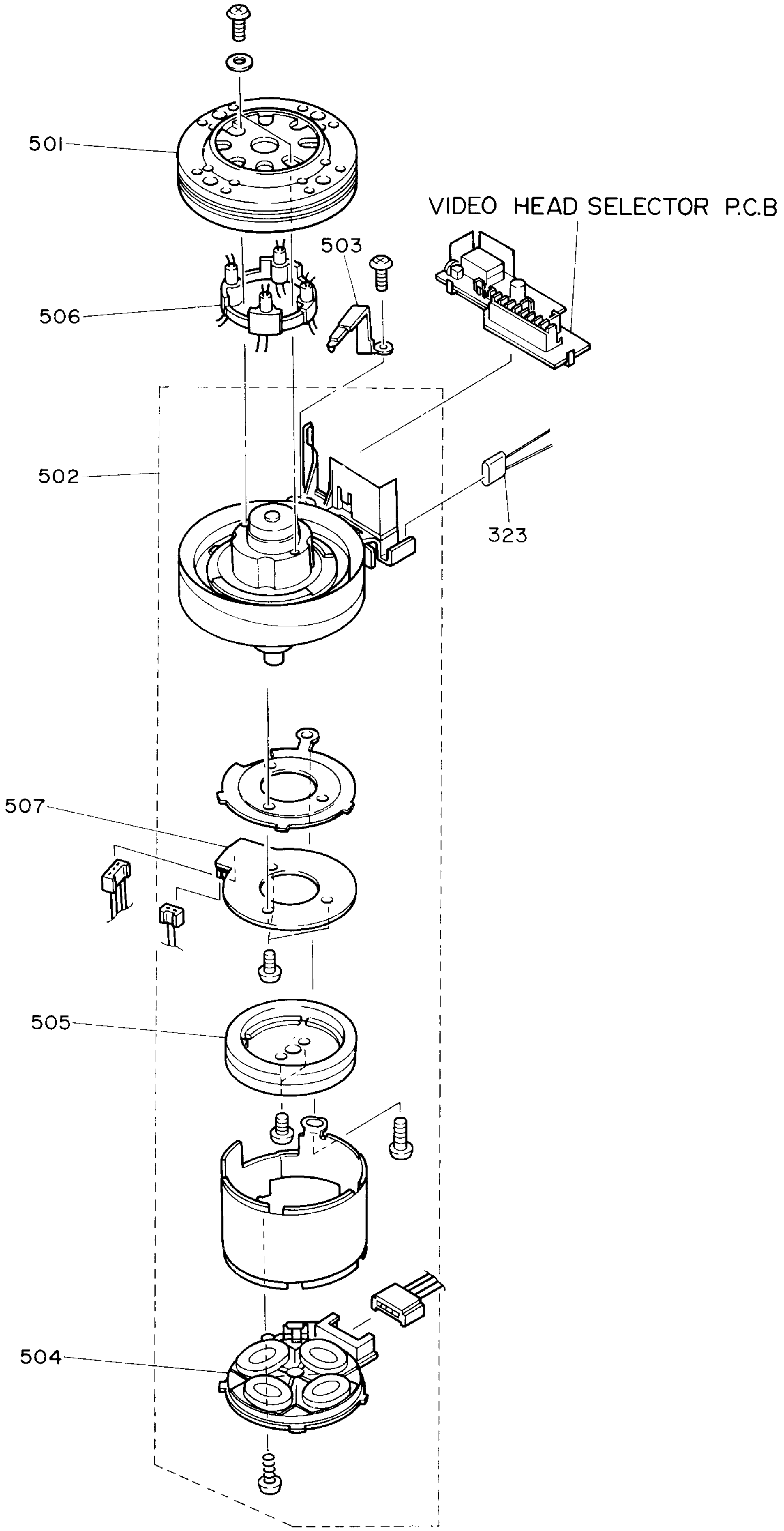


P
H
H
H
H
H
H
CYLINDER MOTOR P.C.B
H
H
H
H

FRONT LOADING MECHANISM SECTION

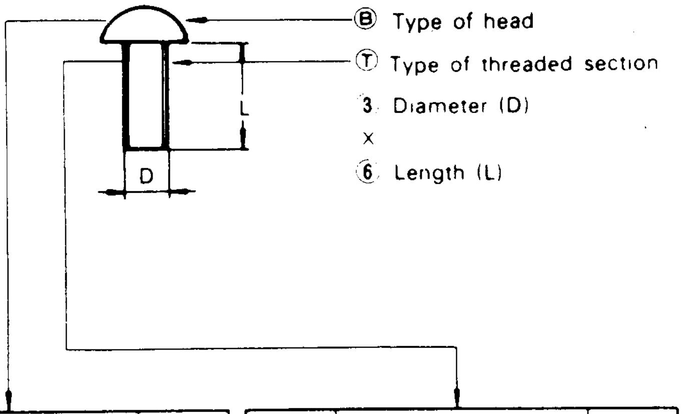

401
408
991
993
994
411
991
405
983
S
H
A
990
406
CONNECTOR P.C.B
991
404
S
B
F
H
992
410
409
402
990
403
986
985
995
414
995
413
412
B

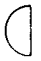
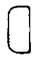
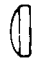
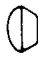
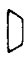
CYLINDER SECTION

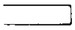
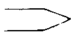
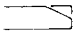
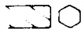

501
VIDEO HEAD SELECTOR P.C.B
503
506
502
323
507
505
504

SCREW CLASSIFICATION

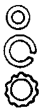
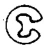
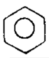
Example BT3 × 6



Abbreviation	Name	Shape
No symbol	Brazier head	
P	Pan head	
B	Binding head	
O	Oval countersunk head	
F	Flat countersunk head	

Abbreviation	Name	Shape
No symbol	Machine (clamps without tapping)	
t	Tapping (clamps with tapping) Type 1	
T	Tapping (clamps with tapping) Type 2	
f	Forming tight (for metal)	
Note	Since the forming tight screw tightens while self tapping machine screws can be replaced by tapping screws	

Washers and Nuts

Abbreviation	Name	Shape
W SW LW	Washer Spring washer Locking washer	
E	E ring	
N	Nut	
Note	Internal dia is indicated for nuts and washers	

LUBRICATION

Lubrication points are shown in the exploded view diagrams by marks as follows

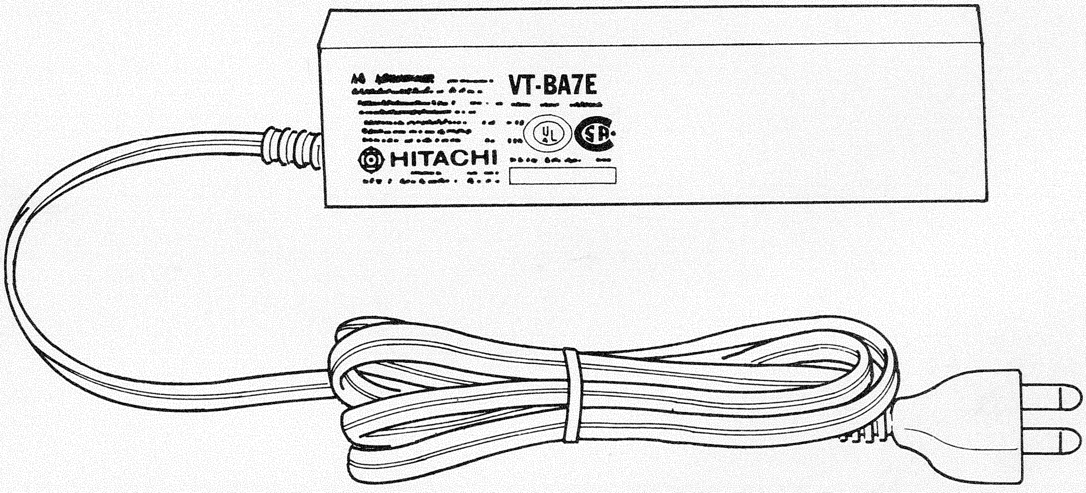
Ⓢ Sonic slider oil (# 1600)
Ⓗ Hitazol (MO-138)
Ⓕ Froil (GB-TS-1)
Ⓟ Pan motor oil

HITACHI SERVICE MANUAL

TK **No. 2019E, G**

VT-BA7E, E(BS, AU)

Technical Dater



CONTENTS

Specifications 1
Safety precaution 1
Adjustment 2
Parts list 3
Schematic diagram 5
Circuit bord diagram 5

Inhaltsverzeichnis

Technische Daten 1
Sicherheitsmaßnahmen 1
Einstellungen 2
Stückliste 3
Schaltplan 5
Leiterplatten-Diagramm 5

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

VIDEO AC ADAPTOR

September. 1983 **TOKAI WORKS**

SPECIFICATIONS

Input :	220–240V ~ 50/60 Hz 35W
Output :	12V — 1.3A (Adapter mode)
	15V — 1.3A (Charger mode)
Dimensions :	182(L)×51(H)×26(D)mm
Weight :	420g

Technische Daten

Eingang :	~ 220–240V, 50/60 Hz 35W
Ausgang :	12V — 1,3A (als Netzgerät)
	15V — 1,3A (als Ladegerät)
Abmessungen (L×H×T) :	182×51×26mm
Gewicht :	420g

SAFETY PRECAUTION

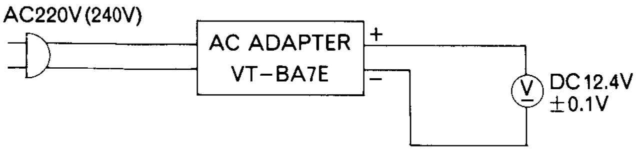
The following precautions should be observed when servicing.

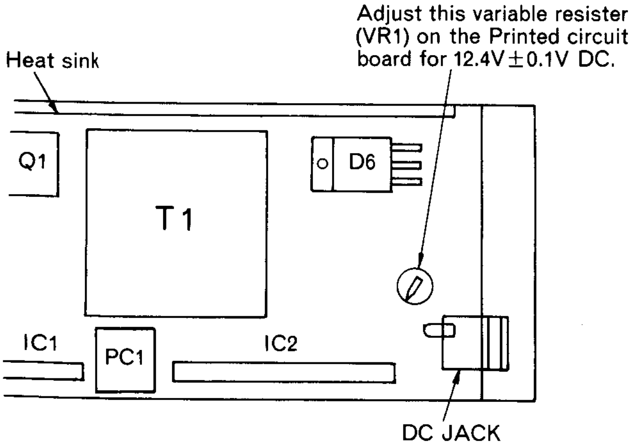
1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makes. Critical parts are marked with ⚠ in the schematic diagram, and circuit board diagram.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

ADJUSTMENT

Voltage Adjustment

1. Check that the power voltage is 220V (240V)
2. Connect the DC voltmeter to both terminals of the load resistor and adjust the variade resistor VR1 so that the voltmeter reads 12.4V±0.1V.


AC220V (240V)
AC ADAPTER
VT−BA7E
+
−
V
DC 12.4V
±0.1V

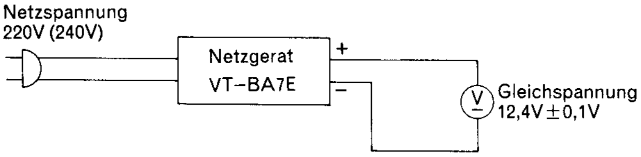

Adjust this variable resister (VR1) on the Printed circuit board for 12.4V±0.1V DC.

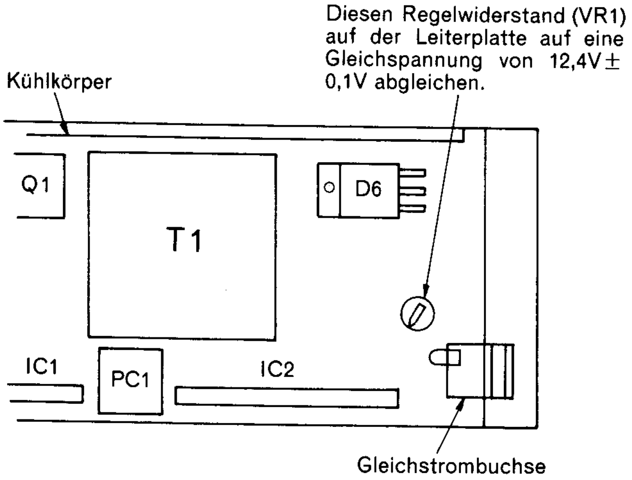
Heat sink
Q1
T1
D6
IC1
PC1
IC2
DC JACK

Einstellungen

Spannungseinstellung

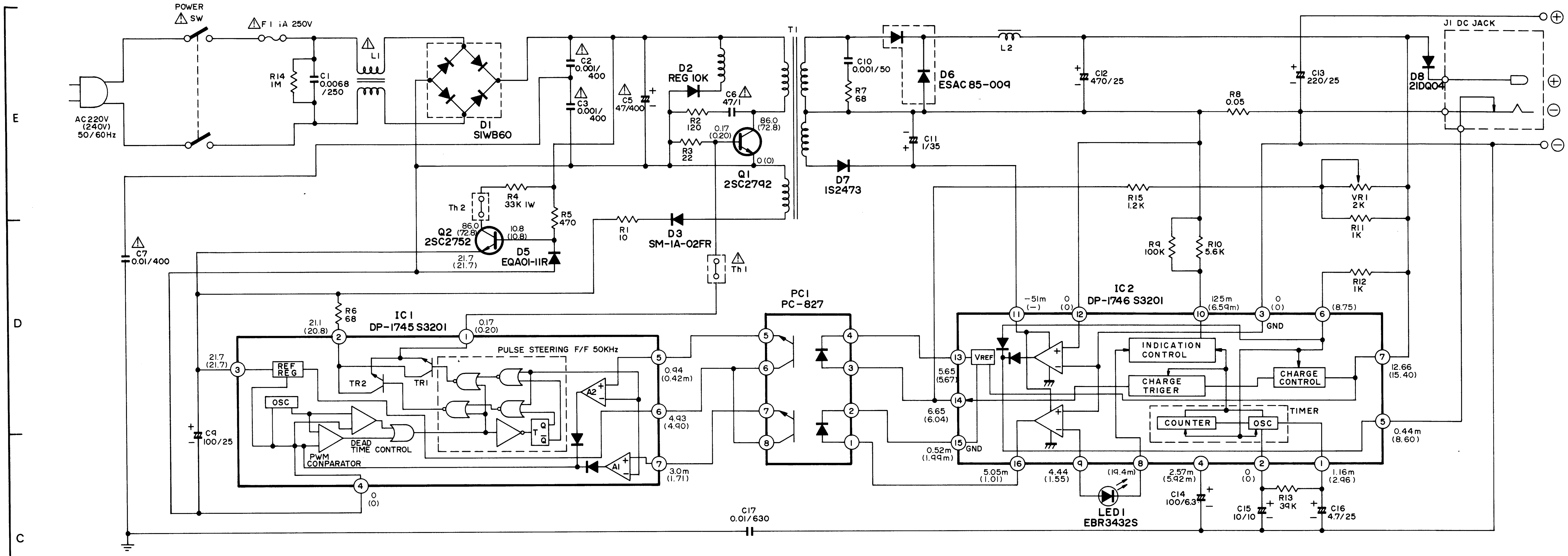
1. Sicherstellen, daß die Netzspannung 220V (240V) beträgt.
2. Einen Gleichspannungsmesser an beide Enden des Lastwiderstandes anschließen und den Regelwiderstand VR1 so abgleichen, daß der Spannungsmesser eine Spannung von 12,4V±0,1V anzeigt.


Netzspannung
220V (240V)
Netzgerat
VT−BA7E
+
−
V
Gleichspannung
12,4V±0,1V

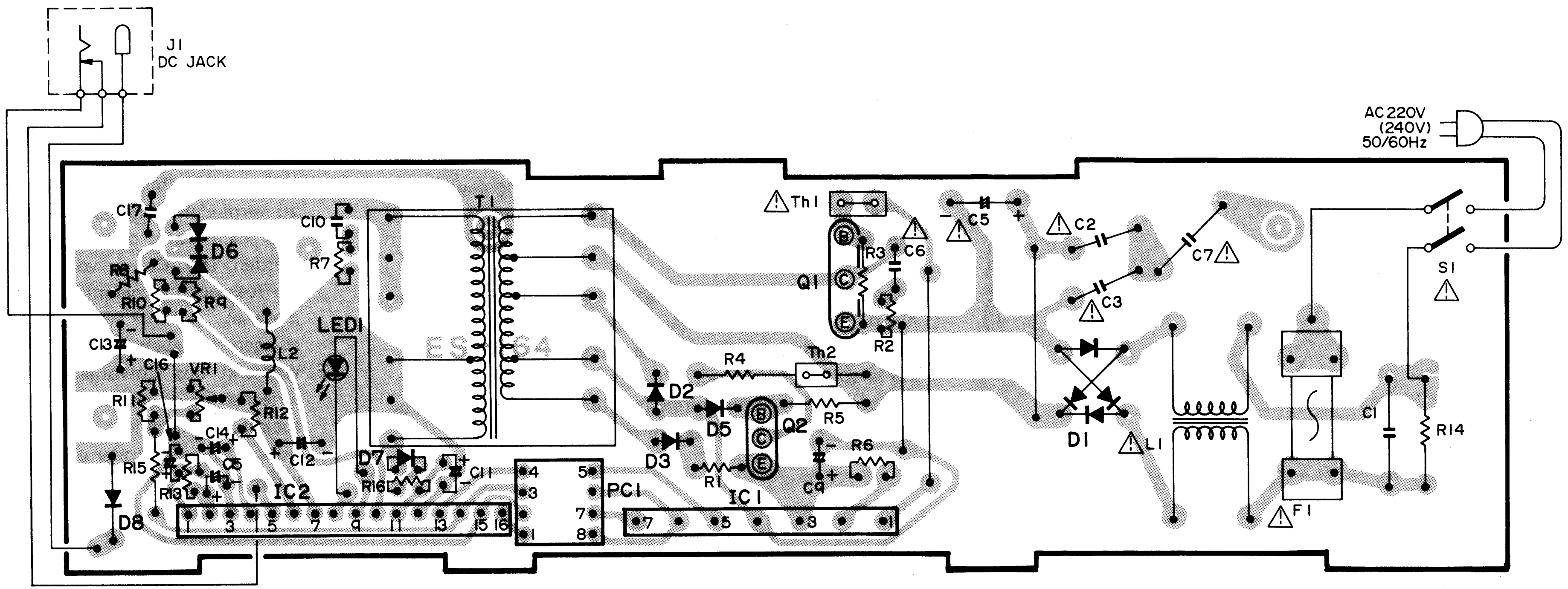

Diesen Regelwiderstand (VR1) auf der Leiterplatte auf eine Gleichspannung von 12,4V±0,1V abgleichen.

Kühlkörper
Q1
T1
D6
IC1
PC1
IC2
Gleichstrombuchse

SCHEMATIC DIAGRAM (SCHALTPLAN)


POWER SW
F1 1A 250V
AC220V (240V) 50/60Hz
R14 1M
C1 0.0068/250
L1
D1 SIWB60
C2 0.001/400
C3 0.001/400
C5 47/400
D2 REG 10K
C6 47/1
R2 120
R3 22
Q1 2SC2792
T1
C10 0.001/50
R7 68
D6 ESAC 85-009
C11 1/35
D7 1S2473
L2
C12 470/25
C13 220/25
R8 0.05
D8 21DQ04
J1 DC JACK
R4 33K 1W
Th 2
Q2 2SC2752
R5 470
D5 EQA01-11R
R1 10
D3 SM-1A-02FR
Th 1
C7 0.01/400
R6 68
IC1 DP-1745 S3201
PULSE STEERING F/F 50KHz
REF REG
OSC
TR2
TR1
A1
A2
DEAD TIME CONTROL
PWM CONPARATOR
C9 100/25
PC1 PC-827
R15 1.2K
R9 100K
R10 5.6K
VR1 2K
R11 1K
R12 1K
IC2 DP-1746 S3201
VREF
INDICATION CONTROL
CHARGE TRIGER
CHARGE CONTROL
TIMER
COUNTER
OSC
GND
LED1 EBR3432S
C14 100/6.3
C15 10/10
R13 39K
C16 4.7/25
C17 0.01/630

CIRCUIT BORD DIAGRAM (LEITERPLATTEN-DIAGRAMM)


J1 DC JACK
AC220V (240V) 50/60Hz
C17
D6
R8
R10
R9
C13
C16
VR1
R11
R12
L2
LED1
C10
R7
T1
R15
R13
C14
C5
C12
D7
R16
C11
IC2
D8
PC1
Th1
Q1
R3
C6
R2
C5
R4
Th2
D2
D5
Q2
R5
D3
R1
R6
C9
IC1
C2
C3
C7
D1
L1
S1
C1
R14
F1

※ (English)
VOLTAGES ARE MEASURED IN ADAPTER MODE AND VOLTAGES IN ( ) ARE MEASURED IN CHARGE MODE.

※ (German)
Die Spannungswerte sind bei Netzbetrieb gemessen, wogegen die in Klammern ( ) augegebenen Werte dem Ladebetrieb entsprechen.

IC2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.16m (2.96)	0 (0)	0 (0)	2.57m (5.92m)	0.44m (8.60)	(8.75)	12.66 (15.40)	(19.4m)	4.44 (1.55)	125m (6.59m)	-51m (—)	0 (0)	5.65 (5.67)	6.65 (6.04)	0.52m (1.99m)	5.05m (1.01)

IC1

7	6	5	4	3	2	1
3.0m (1.71)	4.93 (4.90)	0.94 (0.42m)	0 (0)	21.7 (21.7)	21.1 (20.8)	0.17 (0.20)

Q2

B	10.8 (10.8)
C	86.0(72.8)
E	21.7(21.7)

Q1

B	0.17(0.20)
C	86.0(72.8)
E	0(0)

PARTS LIST

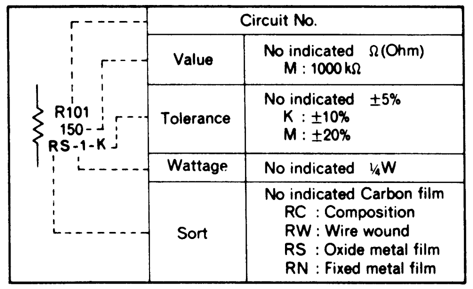
STUCKLISTE

SYMBOL-NO	P-NO	DESCRIPTION
		CAPACITORS
C1	0217207	METAL CAPACITOR 0.068MF AC250V
C15	0256388	TANTALUM ELECTROLYTIC 10MF,10V
C16	0256409	TANTALUM 4.7MF25V
		RESISTORS
R7	0170485	FUSE RESISTOR 68OHM 1/4W+-5%
R8	0190913	SHUNT RESISTOR 0.05OHM
VR1	5007841	VARIABLE RESISTOR 2KOHM(B)
		SEMI-CONDUCTORS
D1	5332322	DIODE SIW860
D2	5332051	DIODE PGP10J
D3	5332301	DIODE SA-1A-02FR
D5	5332291	DIODE EQA01-11R
D6	5332271	DIODE ESAC85-009
D7	5330573	DIODE IS2473
D8	5332311	DIODE 21DQ04
D9	5330573	DIODE IS2473
IC1	5353561	IC DP-1745
IC2	5353571	IC DP-1746
Q1	5323341	TRANSISTOR 2SC2792
Q2	5323542	TRANSISTOR 2SC2752
		TRANSFORMERS
T1	5271231	TRANS FOMER
		COILS
LD1	5381321	LED EBR3432S
L1	5261271	LINE FILTER
L2	5271133	CHOKE COIL
		MISCELLANEOUS
F1	5720179	FUSE 1A
PC1	5381521	PHOTO COUPLER
S1	5602101	SWITCH
TH1	5490141	THERMOSTAT
0102	5672181	DC JACK
		FOR FINAL ASSEMBLY
101	6047731	CASE ASSEMBLY
103	5749671	AC CORD
901	7783191	SCREW

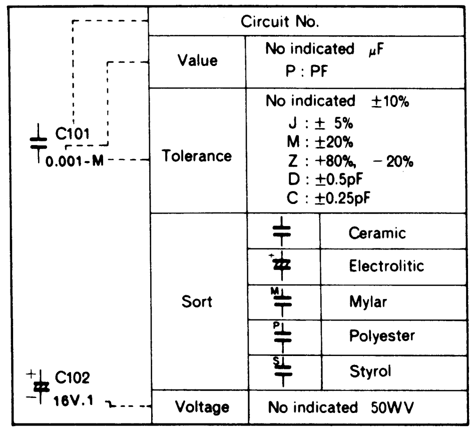
DIAGRAM

Note

1. Voltage measured at base of chassis with minimum volume control and no signal.
   ( ) are shown in recording condition.
2. Nomenclature of Resistors and Capacitors.



Circuit No.	
Value	No indicated Ω(Ohm) M : 1000 kΩ
Tolerance	No indicated ±5% K : ±10% M : ±20%
Wattage	No indicated ¼W
Sort	No indicated Carbon film RC : Composition RW : Wire wound RS : Oxide metal film RN : Fixed metal film



Circuit No.		
Value	No indicated μF P : PF	
Tolerance	No indicated ±10% J : ± 5% M : ±20% Z : +80%, −20% D : ±0.5pF C : ±0.25pF	
Sort		Ceramic
	+	Electrolitic
	M	Mylar
	P	Polyester
	S	Styrol
Voltage	No indicated 50WV	

3. Be sure to make your orders of resistors and capacitors with value, voltage, tolerance and sort.
4. When replacing capacitors marked with ✻, use specified ones stated on parts list since required temperature characteristics.

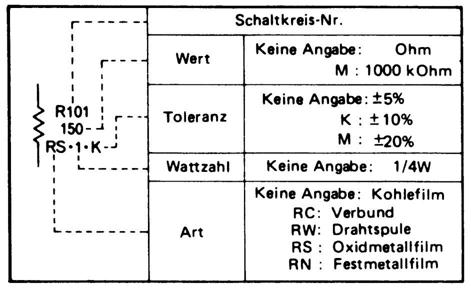
Cautions on use of MOS IC

1. The MOS IC is inserted in black foam for shipment. This foam is a conductor which short-circuits between the leads to prevent damage. Do not remove ICs from this foam during their storage. Avoid removing ICs from this foam, placing them on plastic which is likely to be charged with static electricity or inserting them ints styrol foam.
2. High voltages may be applied during doldering caused by leakages from the soldering iron, so be sure to ground the tip of the soldering iron or use a low voltage soldering iron.
3. The human body, clothes made of synthetic fibres or nylon gloves may be charged with several thousands volts of static electricity because of friction, so a workers should be grounded.
4. Be sure to ground measuring instruments such as oscilloscopes, VTVMs, etc. used for repairs.

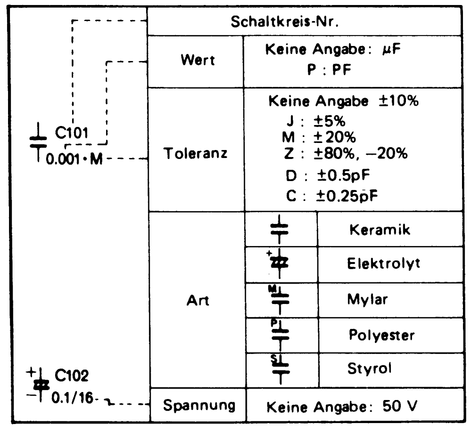
DIAGRAMME

Hinweise:

1. Die am Chassis bei minimaler Lautstärke und ohne Signal ( ) gemessene Spannung ist für die Aufnahmefunktion angegeben.
2. Bezeichnung der Widerstände und Kondensatoren.



Schaltkreis-Nr.	
Wert	Keine Angabe: Ohm M : 1000 kOhm
Toleranz	Keine Angabe: ±5% K : ±10% M : ±20%
Wattzahl	Keine Angabe: 1/4W
Art	Keine Angabe: Kohlefilm RC: Verbund RW: Drahtspule RS : Oxidmetallfilm RN : Festmetallfilm



Schaltkreis-Nr.		
Wert	Keine Angabe: μF P : PF	
Toleranz	Keine Angabe ±10% J : ±5% M : ±20% Z : ±80%, −20% D : ±0.5pF C : ±0.25pF	
Art		Keramik
	+	Elektrolyt
	M	Mylar
	P	Polyester
	S	Styrol
Spannung	Keine Angabe: 50 V	

3. Bei der Bestellung von Widerständen und Kondensatoren müssen Wert, Spannung, Toleranz und Art angegeben werden.
4. Wenn mit * markierte Kondensatoren erneuert werden müssen, nur die in der Stückliste spezifizierten Kondensatoren verwenden, da diese besondere Temperatureigenschaften aufweisen.

Vorsichtsmaßnahmen bei der Handhabung von MOS-ICs

1. Für den Versand werden die MOS-ICs in schwarzem Schaumstoff verpackt. Dieser Schaumstoff ist elektrisch leitend und schließt die Leiter kurz, um Beschädigungen zu verhindern. Während der Lagerung dürfen daher die ICs nicht aus der Schaumstoffverpackung entfernt werden. Die ICs nur vor dem Einbau aus der Schaumstoffverpackung nehmen; dabei aber nicht auf Plastikmaterial (könnte statische Elektrizität aufweisen) ablegen und auch nicht in Styrol-Schaumstoff einsetzen.
2. Während des Lötvorganges könnte es aufgrund von Kriechströmen vom Lötkolben zu hoher Spannungsbelastung kommen; daher unbedingt die Spitze des Lötkolbens erden oder einen Niederspannungs-Ljtkolben verwenden.
3. Der menschliche Körper, aus Kunstfasern hergestellte Kleidungsstücke und Nylon-Handschuhe können mit statischer Elektrizität von einigen tausend Volt geladen sein; vor der Handhabung dieser ICs müssen daher die damit betrauten Techniker geerdet werden.
4. Auch die für Reparaturen verwendeten Meßinstrumente wie Oszilloskop, Röhrenvoltmeter usw. sind zu erden.